# REPORT RESUMES

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ACHIEVEMENT AND ADJUSTMENT OF EDUCABLE MENTALLY HANDICAPPED CHILDREN IN SPECIAL CLASSES AND IN REGULAR GRADES, PARTS I-VI.

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LEARNING ABILITIES OF EDUCABLE MENTALLY HANDICAPPED CHILDREN WERE STUDIED OVER A 4-YEAR PERIOD. THE RESEARCH RESULTED IN THE DEVELOPMENT OF A SIX-PART REPORT. PART ONE, THE ACHIEVEMENT AND ADJUSTMENT OF EDUCABLE MENTALLY HANDICAPPED (EMH) CHILDREN, EMPLOYED THE MATCHED-PAIR METHOD WITH APPROXIMATELY 700 SAMPLES OF EMH CHILDREN, 7-13 YEARS OF AGE. THE RESULTS REVEALED THAT CHILDREN IN SPECIAL CLASSES RESPONDED BETTER AND HAD BETTER BEHAVIOR AND ADJUSTMENT PATTERNS THAN THOSE IN REGULAR CLASSES. PART TWO, TEACHING THE EMH CHILD, COMPARED FOUR METHODS OF INSTRUCTION. THE EXPERIMENT PLACED 50 EMH CLASSROOM TEACHERS INTO 5 INSTRUCTION GROUPS. THE RESULTS FROM TESTING THE GROUPS SHOWED THAT THE INTERESTS AND UNITS METHODS WERE NOT SUPERIOR TO THE SUBJECT-ORIENTED APPROACH. PART THREE, THE CHICAGO TEST OF GENERAL INFORMATION AND GENERAL COMPREHENSION FOR EMH CHILDREN, WAS DESIGNED TO MEASURE THE PROGRESS OF EMH CHILDREN IN GENERAL APTITUDE AREAS AND FORMULATED CURRICULAR OBJECTIVES. ITS CONSISTENCY COEFFICIENT OF 0.94 DISPLAYED THE RELIABILITY IN INDIVIDUAL DIAGNOSIS WHEN INTERRELATED WITH THE ETHICAL COMPREHENSION TEST (ECT). PART FOUR, PERSONALITY APPRAISAL OF EMH CHILDREN, DEVELOPED A SYSTEM OF ANALYZING PICTURE-STORY PROCEDURES. IT INCLUDED A NONINTERPETIVE SCHEMA, A NUMERICAL SUMMARY, AND THE ASSIGNMENT OF SCORES FOR PERSONALITY. PART FIVE, THE CHICAGO COOPERATIVE RESEARCH PRACTICAL READING TEST, WAS CONSTRUCTED TO DETERMINE THE READING PROGRESS OF THE EMH CHILD. THE RELIABILITY OF THIS TEST WAS APPROXIMATELY 0.767. INTERCORRELATIONS SUGGESTED THAT ACHIEVING EMH CHILDREN TENDED TO ACHIEVE CONSISTENTLY. PART SIX, A BRIEF SCREENING INSTRUMENT FOR EVALUATING THE ACADEMIC SKILLS AND PERSONAL ADJUSTMENT OF EMH CHILDREN, DEVELOPED FIVE TESTS AND MEASURING DEVICES. CONSTRUCTION, VALIDATION, AND RELIABILITY WERE REPORTED ON (1) THE WORD RECOGNITION TEST, (2) THE CHICAGO ADJUSTMENT RATING SCALES, (3) A BEHAVIOR CHECKLIST FOR THE PERSONALITY EVALUATION OF EMH CHILDREN, (4) SOCIOMETRIC QUESTIONS, AND (5) INTEREST MATURITY TESTS. (RS)

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I.

# ACHIEVEMENT AND ADJUSTMENT OF EDUCABLE MENTALLY HANDICAPPED CHILDREN

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Cooperative Research Project SAE 6529

BOARD OF EDUCATION
CITY OF CHICAGO
1961

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# ACHIEVEMENT AND ADJUSTMENT OF EDUCABLE MENTALLY HANDICAPPED CHILDREN IN SPECIAL CLASSES AND IN REGULAR GRADES

by

Frances A. Mullen

William Itkin

A four year research project on educable mentally handicapped children in the Chicago Public Schools conducted jointly by the Board of Education of the City of Chicago, The Department of Public Instruction of the State of Illinois, and the Office of Education of the Department of Health, Education, and Welfare of the United States of America.

BENJAMIN C. WILLIS

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# ACHIEVEMENT AND ADJUSTMENT OF EDUCABLE MENTALLY HANDICAPPED CHILDREN IN SPECIAL CLASSES AND IN REGULAR GRADES

Part I. of a six-part report on a series of researches on

## HOW MENTALLY HANDICAPPED CHILDREN LEARN UNDER CLASSROOM CONDITIONS

carried on under the terms of Cooperative Research Project No. SAE 6529, dated February 28, 1957, between the United States of America acting through the United States Commissioner of Education of the Office of Education, Department of Health, Education, and Welfare, and the Department of Public Instruction of the State of Illinois, to provide research through the facilities of the Board of Education of the City of Chicago.

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I. Achievement and Adjustment of Educable Mentally Handicapped Children in Special Classes and in Regular Grades

II. Teaching the Educable Mentally Handicapped Child: A Comparison of Four Methods of Instruction

III. The Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children: Manual and Report

IV. Personality Appraisal of Educable Mentally Handicapped Children: A System for Scoring and Interpreting Picture Story Tests

V. The Chicago Cooperative Research Project Practical Reading Test "Every Day Reading for Fun and Meaning:" Directions for Administration and Scoring. Second Edition.

VI. Brief Screening Instruments for Evaluating the Academic Skills and Personal Adjustment of Educable Mentally Handicapped Children.

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## Chapter 1

## Setting and Purpose

The mentally retarded are found in every community and in virtually every school that serves a total community. According to an accepted definition, mental retardation refers to a sub-average level of general intellectual functioning, reflected by impairment in one or more of the following aspects of adaptive behavior: (1) maturation, (2) learning, and (3) social adjustment. Mentally retarded children are most conspicuously identified in school by their lack of facility in acquiring knowledge. Although this impaired learning ability can and does affect all areas of life, it is most evident in the school situation; if mild in degree it may not be recognized until the child enters school. As the child progresses from the simpler developmental tasks to the more complex social adjustments of independence of movement, ability to relate to age mates and to strangers, and emotional control, the relationship between maturation and general intellectual functioning becomes less close and more affected by non-intellectual factors.

Social adjustment is a particularly important criterion in judging mental retardation at the adult level, where the ability of the individual to maintain himself independently in the community and on the job, and his ability to conform to social standards set by the community are crucial. However, with the school age child, also, the social adjustment of the child is evaluated as a contributing factor to a diagnosis of mental retardation.

Mental retardation obviously covers a wide range of abilities and characteristics and is far from a unitary condition. In school the largest group within the mentally retarded range is frequently designated as the "educable mentally handicapped," meaning children who can eventually learn to read usefully. For the most part they are not ready to start reading at age 6, and they will progress slowly when they do start, but by the age of 16 or so they can reach a useful level, perhaps equivalent on standard tests to the achievement of the normal youngster in 4th, 5th, or, in some instances, even 6th grade. They can attain useful degrees of competency in most other objectives. School programs, state or city, are reluctant to special an IQ standard, since it is recognized that many factors besides a test score are involved in the diagnosis of the degree of mental retardation. When an IQ range is specified as a criterion of retardation, it always refers to a score on an individually administered intelligence test, not a group test, or prepared pencil test. There is agreement on a lower limit of 50 or 55 IQ for the educable mentally handicapped group, with more variation between cities and states as to the upper limit at 70, 75, or 80.

Less able than the "educable mentally handicapped" is another group, the trainable, who will probably never attain really useful competence in reading, writing or arithmetic, but who do profit from group experience. Chicago has shared in the development of the Illinois program for this group, and now has 18 classes.

Above the "educable mentally handicapped" on the scales of general intellectual functioning is a still larger group of slow learning children, most of whom can succeed in the regular school program if they have extra help, and if the school program is adapted to their needs. Schools must also find ways of providing for many children with innately average or superior ability levels of intellectual functioning who fall behind in school because of social, emotional, language, or health factors. All of these youngsters need special help, and schools have developed a wide range of services for them. The research reported in this paper, however, was limited to the "educable mentally handicapped child".

In Chicago, in accordance with practice in many, though far from all such programs, the educable mentally handicapped (EMH) is defined as being generally the group who test at an IQ between 50 and 75 on an individual intelligence test given by a qualified psychological examiner. The psychological examiner uses wide professional judgment to classify a child on the basis of a total case study. Tests are chosen with reference to the particular problems of a child. Language may be minimized for the non-English speaking child, performance items for the child with poor muscular control due to physical disability. Special enlarged testing materials are used for the child with poor vision. Special conditions such as impaired hearing, disturbed emotional condition, sleepiness, ill health, and other factors that might negatively influence performance in the test situation are taken into consideration in making clinical judgments.

How many educable mentally handicapped children are there? Estimates vary according to the cutting points, the evaluation instruments, and the populations used in various surveys. In any sizeable group of school-age children representing an unselected sample of their own community, it is extremely unlikely that less than two per cent would prove after thorough study to be in the educable mentally handicapped group, with another two or three tenths of one per cent still more severely handicapped. Unless a very special program is provided, it is unlikely that many of the trainable or more severely retarded will be found in school classrooms, but most of the two per cent or more of " educable mentally handicapped" are probably in the classrooms of each school district, whether special classes are provided for them or whether they are taught in regular grades. The percentage may rise considerably above the two per cent level, especially in communities where families with many problems predominate. But mental deficiency is no respecter of race or economic level. It occurs in the children of every race and every occupation and every income bracket. The problem of providing optimally for these youngsters and in a manner which does not penalize other youngsters is one that must be faced objectively and realistically by every school and every community. The problem does not disappear because a school has "no facilities". The children are still there. The feasibility of special classes and other special services may well depend on the size of the school, the density of population, the financial resources of the community, the availability of teachers, and other factors.

The first special class in Chicago was opened in 1900, following closely on the establishment of the first school psychological service in the nation in that city in 1899. Classes appeared in other cities at about the same time, or even slightly before. This was a decade before Alfred Binet's tests of intelligence became known and used in this country, but the interest in individual differences was spreading. Schools throughout the nation were recognizing the need to study the problems and the capacities of individual children.

Early classes for these slow youngsters were known as "subnormal rooms" and stressed useful skills. Big looms characterized most of them. Sewing, cooking, and simple carpentry were taught. Some attention was given to reading, writing, and arithmetic, but concepts of citizenship, patriotism, good behavior, self care, and job adjustment were taught orally,by precept, and by practice, and the curriculum was generally meager.

In the thirties, the Chicago program under strong leadership swung to an emphasis on reading and other academic skills. The looms gradually disappeared as teachers with newer training found the day too short for children to spend endless hours on repetitive weaving. With the driving conviction that these children could be taught to read, came wide adoption of individualized work materials. Every child was provided with reading materials at his own level, with keyed objective tests that could be checked by student helpers; arithmetic and spelling were similarly handled. Those were the days of the "non-oral" reading methods. While many teachers continued a rich program of social studies, speech improvement, nature study, job preparation, and other elements, there came to be in other classrooms a monotonous round of paper work. A method of teaching reading, good as a part of a total program, became an end in itself in some classes.

Since 1946, a broader program has been consistently stressed. Lively, cheerful classrooms with many activities in progress have come to be the rule. Music and art enrich many learning experiences. Art and music supervisors, speech correctionists, and other consultants servicing the elementary schools have gradually come to consider the special classroom as much their responsibility as any other part of the school program. Teachers of the mentally handicapped have participated with teachers from all grades in the long process of development of a statement of goals and philosophy for the total school program. The goals adopted for the school system have been kept systematically before the teachers of the mentally handicapped, as before all other teachers. They are encouraged to check regularly to see that their youngsters are progressing toward all of the goals of the curriculum. A full curriculum includes social studies, science, art and music, oral language, and physical education, as well as reading, writing, and arithmetic. For the older children, pre-vocational skills, citizenship, preparation for community living, home making skills, and understanding of problems of family living and job adjustment take on increasing importance.

In a large school system like Chicago's will be found a variety of provisions for the instruction of mentally handicapped pupils. Although there is no school entirely devoted to the mentally retarded, there is one branch building with twenty special classes under an assistant principal with no non-handicapped groups. The main building is across a common playground; both units have a common PTA; the special children are represented on the student council, and feel themselves part of the total school. Other units, although sometimes ranging up to twelve special rooms, are not physically isolated, and are under immediate supervision and direction of the building principal, with no special assistant administrator .

For younger children, classes are still more widely scattered, frequently with only one class per school, in order that these children may remain in their home school when possible. . One third of Chicago's elementary schools have special classes. The others send children to a neighboring school. Central office supervisors and the director of the program for the mentally handicapped bring assistance and advice to the local teacher and principal.

Problem

The national trend in provisions for all handicapped in recent years has been to emphasize the importance of keeping children as close to their home neighborhood as possible, their associations with the non-handicapped as free and frequent as possible. This thinking has been followed to the point of questioning the advisability of even the most integrated of special classes. Some have expressed the view that seriously retarded children, or blind, or others could be effectively educated in regular grades if enough ingenuity were exercised in planning the program.

After many years of special programs for mentally handicapped children, there remained two conflicting points of view with regard to the effectiveness of special classes for handicapped children. Some believe that with individual attention in classes of small membership these children can be helped to make optimum progress in academic skills. Others are equally convinced that educable mentally handicapped children learn best in regular classrooms because of the stimulation of children brighter than themselves. Some believe that mentally handicapped children develop feelings of inferiority and rejection as a result of being segregated in special classes, while research on the social status of mentally handicapped children has shown that the mentally handicapped tend to become rejected by their peers in regular classes because of unacceptable behavior resulting from their inability to compete. (Johnson and Kirk, 1950)

By 1956, forty-six of the forty-eight states either permitted or required special facilities for the education of mentally handicapped children. Yet, after more than half a century of special facilities for educable mentally handicapped children, there had not been any adequately controlled experiments demonstrating the effectiveness of these programs. By 1956, only a small number of studies had been made comparing the progress of educable mentally handicapped children in special classrooms and in regular grades. In early studies, special class and regular grade children were sometimes matched on an a priori basis on factors such as sex, chronological age, mental age, and IQ. Little was known about the correlates of achievement and adjustment of educable mentally handicapped children. Little definite evidence was at hand with respect to selective factors in placement which might have biased results. The extent of bias in the findings of these early studies, therefore, could only be guessed. And each man's guess could be reconciled comfortably with each man's bias.

## Purpose

The major purpose of the present experiment was to compare the progress of educable mentally handicapped children in special classes and in regular grades with respect to both academic and non-academic criteria. This study concerned itself not only with whether educable mentally handicapped children made better progress in reading, arithmetic, and other subjects in one placement or the other, but also with whether they behaved better, tried harder, were more responsible, and felt better about themselves in one placement or the other.

## Major hypothesis

This study was designed to test the following major hypothesis: Mentally handicapped pupils profit more from instruction in a special class made up of pupils whose rate of mental growth is similar to their own than they do from instruction in a mixed class of bright, average, and dull pupils.

In addition to comparing the over-all effectiveness of special class placement of mentally handicapped children with that of regular class placement of these children, this study investigated a number of additional problems: (1) Is early identication and early placement of mentally handicapped pupils advantageous? (2) Under what circumstances do educable mentally handicapped children make better progress in special classes and under what circumstances do they make better progress in regular grades? (3) What factors in regular classrooms determine the effectiveness of instruction of mentally handicapped children enrolled in such classes? (4)What are the factors which determine whether educable mentally handicapped children will make good or poor progress in special classes and in regular grades?

To test the subsidiary hypotheses, studies were made of correlates of achievement and adjustment of educable mentally handicapped children and of factors associated with rapid and slow progress in regular grades and in special class placement. A study of selective factors in placement was carried out to throw additional light upon interpretation of findings.

A second major aspect of the Chicago Cooperative Research Project involved a study of the relative effectiveness of several special methods of teaching reading to educable mentally handicapped children. The methods experiments are reported in a separate publication.

# Chapter 2

## Procedure

### Subjects: General Criteria

The subjects in this experiment were educable mentally handicapped children, ages 7 through 13 as of September 1, 1957, with IQ's on the Stanford-Binet of 50 to 74, inclusive.

### A Pilot Study

The first step in carrying out the experiment was a Pilot Study on a sample of 263 educable mentally handicapped (EMH) children which was carried out during the Spring of 1957. The subjects in the preliminary study were drawn at random from the total number of pupils enrolled in special classes and from the list of children diagnosed as EMH, but enrolled in regular grades while waiting for special class placement. The pilot study is reported in Mullen, Itkin, and Brauer (1959). The preliminary study had three objectives:

(1) to determine which background factors would be most important to control in the major experiment,

(2) to develop a coding system for recording social, physical, and educational data, and,

(3) to select and develop measures of progress related to the academic and non-academic goals of the curriculum.

Forms and instruments developed for use in the pilot study included a Case Record Folder for recording background data, rating scales of socio-economic and home background factors, motivation rating scales and behavior checklists, and an index of community socio-economic status for the city of Chicago. The Stanford Achievement Battery was the major academic evaluation instrument used in the pilot study. The Haggerty-Olsen-Wickman Behavior Schedule B, the Children's Anxiety Test of Casteneda, McCandless, and Palermo, and Adjustment Rating Scales previously developed in the Bureau of Child Study supplemented the motivation rating scales and the behavior checklist developed by the project staff. The Children's Anxiety Test was administered orally to the older children in the preliminary study.

To determine which social background factors were related to the achievement and adjustment of educable mentally handicapped children, two criterion achievement groups and two criterion adjustment groups were selected. The upper criterion group in achievement consisted of the 27 per cent of the boys and the 27 per cent of the girls for each half year mental age interval above 6.0 who received the highest average reading scores on the Stanford Achievement Test. The lower achievement group consisted of the 27 per cent of the boys and of the girls in each half-year mental age interval who received the lowest average reading scores. The upper group in adjustment consisted of the 27 per cent of the subjects for each two-year chronological age group who received the highest scores on the Adjustment Rating Scale; the lower group on adjustment consisted of the 27 per cent of the subjects for each two-year age group who received the lowest Adjustment Rating Scale scores. Four background factors were found to be related to reading achievement at the 5 per cent level of statistical significance. These factors were a history of school attendance in the Rural South, teacher ratings of pupil motivation, parental occupation, and mental age. Community socio-economic ratings, sex, and teacher ratings of pupil motivation were found to be related to adjustment. Insufficient data were available on foreign language spoken in the homes and brain injury to warrant confident conclusions with respect to relationships between these factors and achievement and adjustment.

Controls

On the basis of the pilot study , a preliminary decision was made to equate the special class and regular grade children in a matched-pair experiment on the following factors: (1) age, (2) IQ, (3) sex, (4) socio-economic community ratings, (5) reading achievement, as extrapolated from previous achievement test data, (6) school attendance in the Rural South, and (7) foreign language spoken in the home.

Where data were available, it was also decided to match on brain injury, speech defects, and adjustment appraisals based upon the psychological reports.

Selection of Subjects

As a basis for the selection of equated groups of special class and regular class educable mentally handicapped children for a matched-pair experiment, 2865 records of psychological studies of EMH children, ages 7 through 13, with IQ's of 50 to 74, inclusive, were read from the files of the Bureau of Child Study of the Chicago Board of Education. These cases constituted the entire population of current cases for the ages and IQ's specified, in the files as of August 16, 1957. Of these, 798 were on the waiting list and 2067 were placed in special divisions or were being transferred to special divisions as of September 3, 1958. From these records, data were abstracted for the purpose of choosing the matched groups.

More than 300 pairs of educable mentally handicapped children were tentatively matched on age, sex, IQ, socio-economic community ratings, history of school attendance in the Rural South, foreign language spoken in the home, and reading achievement extrapolated from previous test data. As cases were tested during the 1957-58 school year, the tentative matchings on the basis of extrapolated reading scores were checked against actual reading scores on the Stanford Achievement Test. Pairs whose grade scores on the Stanford Reading Tests administered by project examiners were more than .5 grade apart were rematched.

Rematching on initial reading achievement, movement of pupils in and out of special classes, and transfers from the school system made it necessary to maintain a constant rematching process while the testing of cases for the major experiment was being carried on. During the 1957-58 school year, a total of 681 cases were tested in the Matched-Pair Experiment. Of these, 240 pairs were matched on seven major factors, including initial reading achievement. The psychological appraisals made from reading of the psychological reports, however, was considered an inadequate behavior matching variable. A decision was made to match cases on general agreement of teacher and examiner ratings of adjustment. During the 1958-59 school year more than 560 cases were retested. Losses of matched pairs because of pupil transfer and change of placment, and rematching because of the addition of the behavior matching variable, and the administration of Stanford-Binet Tests to cases whose psychological examinations were outdated, reduced the number of pairs who were tested during the first year of the Project and retested one year later to 140 pairs. Sixty-four pairs remaining in their original placement for at least eighteen of twenty school months were retested at a two-year interval.

### Comparison of Special Class and Regular Grade Pairs

A comparison of the 140 matched pairs of special class and regular grade children on seven matching variables and on test-retest interval is presented in Table 1. Additional comparisons of the two groups are described in Chapter 6. In the present report, the studies of correlates of achievement and adjustment of educable mentally handicapped children and of factors associated with rapid and slow progress are based on the entire sample of tested cases. Comparisons of matched pairs to be reported are based upon the matched cases only.

### Factors Studied and Data Recorded

A Case Record Folder for recording social, educational, physical, and psychological data on all of the cases in the Matched-Pair Experiment appears in Appendix A to this report. Some of the more important categories in this folder are:

Sex
School History
Present Grade Placement
Previous School History
Regularity of Attendance
Changes of School
Evidence of Educational Deprivation

Psychological Test Data
- Age at Time of Placement in Special Division
- Chronological Age
- Mental Age
- IQ
- Validity of IQ Questioned by Examining Psychologist or Project Examiner

Parental Attitude Toward Placement

Reason for Non-Placement

Marital Status of Parents

Broken Homes

Birthplace of Child and of Parents

Length of Residence of Family in Chicago

Person-per-Room Ratio

Type of Housing

Contact with Social Agencies

Occupation of Parents

Number of Siblings

Education of Parents

School Transiency Index

Community Socio-Economic Index

Physical Defects
- Vision
- Hearing
- Speech
- Psychiatric
- Medical
- Organic
- Neurological
- Riggs-Rain Classification Factors

Table 1

Comparison of Special Class and Regular Class Groups

| | Group | | | | | | |
|---|---|---|---|---|---|---|---|
| Variables | Special Class | | Regular Class | | Test of Significance[a] | | |
| | N | M | N | M | Wilcoxen T | t | $X^2$ |
| IQ Questioned | 51 | | 48 | | | | |
| IQ | | 68.978 | | 69.150 | ns | | |
| Test-Retest Interval | | | | | ns | ns | |
| CA | | 11-3.14 | | 11-2.93 | ns | | |
| Educational Experience in Rural South | 25 | | 25 | | | | ns |
| Brain Injury in Records | 0 | | 0 | | | | ns |
| Foreign Language Background | 2 | | 2 | | | | ns |
| Males | 76 | | 76 | | | | ns |
| Females | 64 | | 64 | | | | ns |
| Community Socio-Ec Rating 1 | 59 | | 51 | | | | ns |
| 2 | 38 | | 46 | | | | |
| 3 | 32 | | 32 | | | | |
| 4 | 7 | | 7 | | | | |
| 5 | 1 | | 0 | | | | |
| 6 | 3 | | 4 | | | | |

* ns signifies that differences between groups was tested, but found not significant.

Ratings of home background factors were also uniformly recorded for cases in the Matched-Pair Experiment. These included ratings on parental cooperativeness, home atmosphere, educational aspiration of the family, and home pressure for achievement. Ratings on home background factors were made by project examiners on the basis of information from school personnel, school records, and interviews with the child and with others. In making these ratings, examiners were instructed to make the best judgment that could be made on the basis of present and past information, being careful to consider the possibility of change of home conditions since previous ratings and applying the same critical evaluation to their own past ratings as to other sources of information. Along with ratings of these home background factors, examiners coded the degree of confidence in the ratings made. The home background rating scales and instructions for coding sources of information and confidence levels appear in Appendix A.

Data sheets were also prepared for recording classroom and school factors. Classroom and school factors coded included the following:(1) school enrollment, (2) school size in terms of number of divisions, (3) class size, (4) class homogeneity, (5) availability of special assistance in reading and arithmetic, (6) integration of special classrooms within the school, (7) size and physical appearance of rooms, (8) emotional atmosphere of classrooms, (9) evidence of planning (10) teacher adaptability, (11) control, and (12) teacher's evaluation of adequacy of present placement of child in relation to his abilities and needs. Examiners also were required to make ratings on five-point scales of effectiveness of teaching, classroom atmosphere, and physical appearance of the room.

A consistency check on coding of the Case Record Folder was carried out during the Spring of 1960. One hundred eight cases tested during the Spring of 1959 and retested in 1960, were involved in the consistency check. In coding the 1960 cases, examiners obtained from the 1959 folders only the information necessary to identify a case. After testing of cases and completion of coding, Case Record Folders were submitted to the statistical department for a consistency check against previously coded information. Results of the consistency check are given in Table 2. This table indicates that the coding of the background information on the Case Record Folder was highly reliable. Examiners found data on a number of the categories difficult to obtain. This was particularly true of occupation of chief wage earners and education of parents. Data on physical factors were extremely meager in view of the small number of cases having complete physical records. On the whole, however, the data that were obtained on the background factors may be considered to have a satisfactory degree of accuracy. School and classroom data sheets were not subjected to similar consistency checks, since much of the data on these sheets were judgmental in nature and subject to change from one observation to another.

## Measuring the Progress of Educable Mentally Handicapped Children

The design of the Chicago Cooperative Research Project provided for an evaluation program of wide scope. An effort was made to test children's progress toward often professed but seldom evaluated objectives of the curriculum, objectives such as development of economic competence, protection of life and health, comprehension of ethical standards, respect for one's fellow man, acceptance of one's self, and the appreciation of one's democratic heritage. The adequacy or validity of available measurement instruments was a basic problem. Evaluation instruments adequate for use with average children often are not equally appropriate for use with educable mentally handicapped children. Educable mentally handicapped children tend to be especially handicapped in reading and spelling. Printed achievement tests which have to be read and which require written responses may therefore yield test scores which do not adequately reflect the non-verbal child's comprehension. Test content appropriate for a normal child may not be equally appropriate for an EMH child. Because of his special limitations, a different emphasis upon curricular objectives may be necessary. The quality of instruction of a program for EMH children may, therefore, be reflected not so much in the extent to which objectives suitable for the average child are met, but rather to the extent to which objectives

## Table 2

### Consistency Check on Coding of Case Record Folder Data

N=108

| | Coding Errors 1959 | | Coding Errors 1960 | | Missing Data 1959 | | Missing Data 1960 | | Completeness and Accuracy Percentage | |
|---|---|---|---|---|---|---|---|---|---|---|
| Column | Errors | % | Errors | % | f | % | f | % | Number Consistently and Completely Coded[a] | Percent of Total |
| 7-8 | - | 0 | -- | 0 | - | 0 | 1 | .92 | 107 | 99.07 |
| 9 | - | 0 | 2 | 1.85 | - | 0 | 4 | 3.70 | 102 | 94.44 |
| 10 | - | 0 | 2 | 1.85 | - | 0 | 5 | 4.62 | 101 | 93.51 |
| 11 | 1 | ..92 | -- | 0 | - | 0 | 2 | 1.85 | 105 | 97.21 |
| 12 | 11 | 10.18 | 16 | 14.81 | - | .92 | 1 | .92 | 79 | 73.15 |
| 13 | 9 | 8.83 | 14 | 12.96 | - | 0 | 1 | .92 | 84 | 77.77 |
| 14 | 1 | .92 | 9 | 8.83 | - | 0 | 3 | 2.77 | 95 | 87.96 |
| 17 | 4 | 3.70 | 7 | 6.48 | -- | 0 | 1 | .92 | 96 | 88.88 |
| 18 | 3 | 2.77 | - | 0 | 1 | .92 | 3 | 2.77 | 101 | 93.51 |
| 19 | 1 | .92 | 4 | 3.70 | - | 0 | 9 | 8.33 | 94 | 87.03 |
| 20-21 | 1 | .92 | - | 0 | - | 0 | - | 0 | 107 | 99.07 |
| 22-23 | 2 | 1.85 | 1 | .92 | - | 0 | - | 0 | 105 | 97.21 |
| 24-25 | - | 0 | 2 | 1.85 | - | 0 | 1 | .92 | 105 | 97.21 |
| 26 | - | 0 | 7 | 6.48 | 5 | 4.62 | 10 | 9.25 | 86 | 79.63 |
| 27 | 2 | 1.85 | 4 | 3.70 | 1 | .92 | - | 0 | 101 | 93.51 |
| 28 | 1 | .92 | 2 | 1.85 | 0 | 0 | - | 0 | 105 | 97.21 |
| 29 | 1 | .92 | - | 0 | - | 0 | 5 | 4.62 | 102 | 94.44 |
| 30 | - | 0 | - | 0 | - | 0 | 2 | 1.85 | 106 | 98.14 |
| 31 | - | 0 | - | 0 | - | 0 | 1 | .92 | 107 | 99.07 |
| 32 | - | 0 | 1 | .92 | - | 0 | 1 | .92 | 106 | 98.14 |
| 33 | 3 | 2.77 | 4 | 3.70 | - | 0 | 4 | 3.70 | 97 | 89.81 |
| 34 | 4 | 3.70 | 7 | 6.48 | - | 0 | 2 | 1.85 | 95 | 87.96 |
| 35 | 9 | 8.83 | 9 | 8.83 | - | 0 | 6 | 5.55 | 84 | 77.77 |
| 36 | 3 | 2.77 | 7 | 6.48 | 4 | 3.70 | 16 | 14.81 | 78 | 72.22 |
| 37 | - | 0 | 1 | .92 | 1 | .92 | 9 | 8.33 | 97 | 89.81 |
| 38 | 4 | 3.70 | 8 | 7.40 | 7 | 6.48 | 12 | 11.11 | 84 | 77.77 |
| 39 | 1 | .92 | 3 | 2.77 | 1 | .92 | 5 | 4.62 | 98 | 90.74 |
| 40 | 13 | 12.03 | 5 | 4.62 | 1 | .92 | 2 | 1.85 | 87 | 80.55 |
| 41 | 1 | .92 | 3 | 2.77 | 1 | .92 | 2 | 1.85 | 101 | 93.51 |
| 42 | 2 | 1.85 | - | 0 | 6 | 5.55 | 9 | 8.33 | 91 | 84.26 |
| 43 | 5 | 4.62 | - | 0 | 6 | 5.55 | 10 | 9.25 | 87 | 80.55 |
| 44 | 8 | 7.40 | 2 | 1.85 | 1 | .92 | 3 | 2.77 | 94 | 87.03 |
| 45 | 2 | 1.85 | - | 0 | - | 0 | 1 | .92 | 105 | 97.21 |
| 46 | 2 | 1.85 | 4 | 3.70 | 1 | .92 | 3 | 2.77 | 98 | 90.74 |
| 47 | 1 | .92 | 1 | .92 | 1 | .92 | 2 | 1.85 | 103 | 95.57 |
| 48 | 1 | .92 | - | 0 | 1 | .92 | - | 0 | 106 | 98.14 |
| 49 | - | 0 | - | 0 | - | 0 | - | 0 | 108 | 100.00 |
| 50 | - | 0 | - | 0 | - | 0 | 2 | 1.85 | 106 | 98.14 |

[a] Coding changes between 1959 and 1960 by reason of change of status on factors were included in the consistently coded category.

crucial to the EHH child are met. A final problem has to do with the specific limitations of a standardized evaluation instrument for use with EMH children. A test which has good validity for use with normal children may have very low validity when applied to EMH children. The influence of guessing upon scores at a beginning level of a reading test may be a much more serious limitation upon the validity of that test with a sample of EMH than with a sample of normal children. On the other hand, the selection of a test with too low a ceiling may inadequately reflect the academic abilities of a high achieving EMH child.

### Tests of Academic Skills

The basic standardized achievement battery used to evaluate the communication skills of educable mentally handicapped children in the Chicago Cooperative Research Project was the Stanford Achievement Test. In the Matched-Pair Experiment, this test was ordinarily administered to one child at a time. Since the publisher's manual reported both the primary and elementary level of the test appropriate at the third grade level, the primary level of the battery was administered to children whose reading scores, on the basis of past performance, were expected to be below 3.5. The elementary level of the test was administered to the children whose average reading scores were expected to be 3.5 or above. If after administration of the test it was found that a child scored above 4.0 in the Primary, he was given the Elementary level. If he scored below 3.0 on the Elementary, he was retested with the Primary level. The same level of a test was given for arithmetic and for reading. The child's reading score, therefore, determined the level of the battery he was to be given.

Children scoring 1.0 on the Stanford Primary Reading Comprehension Test were given a Metropolitan Reading Readiness Test.

### The Word Recognition Test

In order to add to the precision of measurement at the first grade reading level, where, in a multiple choice test, the validity of obtained scores may be greatly influenced by lucky guessing, a word recognition test was developed in the Cooperative Research Project. This test was administered individually.

It consisted of thirty flash cards, each having one word. The words on this test were selected on the basis of a study of the word lists contained in the first grade readers of six publishers whose books were on the approved list of the Bureau of Instructional Materials of the Chicago Board of Education. Children obtaining a score of fewer than six words on this list were given a pre-primary level of the test which involved recognition of forms, letters, and words. The Word Recognition Test has been described by Barry and Richards (1961).

Speech Observation Checklist

Progress in speech was evaluated by means of the Speech Observation Checklist, which was devised for the Cooperative Research Project by Irma Kratovil, Supervisor of the Division of Speech Correction. The Speech Checklist consisted of ratings of general fluency, intelligibility, voice, level of language development, and a subjective over-all rating of speech. The speech checklist is shown in Appendix A.

The Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children

A major problem in evaluating the progress of educable mentally handicapped children in subject areas other than the language arts is to obtain a measure of their comprehension which is not influenced by their reading and spelling handicaps. An individual test of information and comprehension, the Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children (GICT), was therefore developed. The construction of the GICT was oriented toward two major purposes: (a) coverage of content areas of the curriculum, and (b) pertinence to the attainment of major curricular objectives. The GICT consists of five sub-tests: (a) Health, Physical Education and Safety, (b) Science, (c) Ethical Comprehension, (d) Social Studies, and (e) Functional Arithmetic. There are ninety-six items in the GICT . The test requires approximately forty-five minutes to administer. The construction, scoring, reliability and validity of this test is reported in a Manual of Administration and Scoring (Mullen, Itkin, and others, 1960).

The Ethical Comprehension Test (ECT) consists of fourteen items. The issues represented in this test include the following: responsibility for one's actions, restitution, cheating, respect for property rights of others, consideration for others, respect for authority and for rules and regulations, forgivingness, honesty, and truthfulness. For a sample of 566 EMH children, 8 to 15 years of age, inclusive, with IQ's of 50 to 74, inclusive, a correlation of .81 was obtained between GICT total scores and Stanford-Binet MA extrapolated from dates of previous examinations. The correlation between the GICT and Average Reading on the Stanford Achievement Test was .75, and the multiple correlation between GICT, Average Reading, and MA was .86. These correlations were based on 558 cases from the retest year. In the computation of these correlations,the Ethical Comprehension Test score was not included in the GICT total score. Kuder-Richardson formula 20 Reliability Coefficients for the GICT sub-tests, except the ECT, ranged from .74 to .86, and the reliability coefficient of the total GICT was .94. The split-half reliability coefficient of the Ethical Comprehension Test, corrected for attenuation, based on 100 cases selected at random from the entire sample, was .78.

The Cooperative Research Project Practical Reading Test

The Chicago Practical Reading Test was constructed for the purpose of testing how well the educable mentally handicapped child has learned the symbols, words, phrases, and sentences essential for his protection and orientation in everyday life situations. It was constructed for the purpose of determining how well this child has been able to learn the particular type of reading which would be most important to his independent functioning in everyday life situations. The material in this test is presented as a reading experience. The test is organized into two levels, Primary(Book 1) and Advanced (Book 2). Book 1 begins with a test of the ability to discriminate symbols, signs, words and phrases. More difficult levels of the test progress to items measuring the child's ability to follow printed instructions, to use sources such as the newspaper, TV Guide, and telephone directory, and to fill out forms and applications. Book 1 is intended for use with pupils in primary educable mentally handicapped classes, or with EMH pupils below 12 years of age. Book 2 is intended for use with pupils in advanced EMH classes, or with pupils above 12 years of age. In the Cooperative Research Project Matched-Pair Experiment, the primary form of the Practical Reading Test was given to children with average reading scores on the Stanford Achievement Test of 2.4 and below and the advanced form was given to those with Stanford Achievement Reading Test scores of 2.5 and above. The Kuder-Richardson Formula 20 Reliability Coefficient of Book 1 was .81 and of Book 2, .75. Scoring standards and data on construct validity of the PRT are given in a separate manual (Scarborough and Cummings, 1961).

Measuring the Non-Academic Objectives of an Instructional Program

Education generally, today, has accepted as objectives of the curriculum, the development of pupil behavior and attitudes, as well as of skills and information. These behaviors and attitudes have been expressed in terms such as getting along harmoniously with others, being able to take care of one's health and safety, responsibility, self-dependence, consideration for the rights of others, acceptance of one another as individuals, and appreciation of other groups. Attaining these attitudes or behavior patterns may be even more important to mentally handicapped than to normal children, since their success or failure to attain these characteristics may make the ultimate difference in their being able or unable to make independent adjustments to adult life.

The absence of adequate measures of these personality and behavior characteristics has been responsible for much of the weakness in evaluation research. Evaluation of the non-academic objectives of an instructional program, and especially the evaluation of the effectiveness of an instructional program with mentally handicapped children, is a particular problem because of the scarcity of adequate criterion measures. Paper and pencil tests require reading, and many educable mentally handicapped children are severely retarded academically. With those who are able to read at the third or fourth grade level, there is a question as to the adequacy of their comprehension of paper and pencil tests. Projective tests present problems of interpretation, objectivity and economy of scoring, and the influence of productivity levels upon derived scores. The validity of examiner ratings is affected by opportunities to observe and by economic limitations on the number of diagnostic measures that may be applied. Teacher report measures may be influenced by opportunities to observe, by frames of reference of raters, and by considerations of reasonableness of demands that may be imposed upon a teacher's time.

In the Cooperative Research Project experiments, attempts to assess progress toward non-academic objectives of the curriculum were made through three approaches: (1) through teacher report measures, (2) through examiner observations and evaluations, and (3) through pupil performance. The teacher report instruments included an Adjustment Rating Scale and Behavior Checklist. Examiner evaluation measures included an Observation Checklist, Motivation Appraisal, and Personality Categorization. The performance instruments included a combination of the Thematic Apperception Test (TAT) and Michigan Picture Test (MPT), using five cards from each, a sociometric interview, and a test of maturity of interests.

### The Adjustment Rating Scale for Use of Teachers

The Chicago Public Schools Adjustment Rating Scale was developed in the Bureau of Child Study during the 1955-56 school year. It is a simple instrument designed for use as a screening measure to select children in need of psychological service. It attempts to measure facets of a child's adjustment which teachers are in a position to observe and which can be described in objective terms. It consists of four rating scales:(1) Over-all Classroom Work, (2) Over-all Classroom Behavior, (3) Adjustment to Other Children,and,(4) Social Participation. Scores on these four scales are combined into an over-all adjustment rating scale score, and scores on the two latter scales are combined into a social adjustment score. The construction and scoring of this instrument is described in Itkin, (1960).

### The Behavior Checklist for Use of Teachers

The Behavior Checklist consists of thirty-nine statements descriptive of behavior observable in a classroom or school situation. Teachers answer each item by circling a number in a "yes" column or a "no" column to indicate whether or not a certaindescription applies to a particular child. This instrument has undergone four revisions and item analyses. Scores on three of the basic scales are combined to yield seven personality patterns. The five scales are designated as follows: (1) the Well-Adjusted Scale (a general adjustment scale)(2) Passive. (3) Agressive, (4) Motivation, and, (5) Responsibility. The seven patterns into which scores on the first three scales are combined are: (1) Well-Adjusted, (2) Moderately Well-Adjusted, (3) Passive, (4) Passive-Aggressive, (5) Hyperactive, (6) Active-Aggressive, and, (7) Moderately-Aggressive. Kuder-Richardson Formula 20 Reliability Coefficients on 466 educable mentally handicapped subjects ranged from .86 for the Motivation Scale to .92 for the Well-Adjusted Scale. The construction, scoring, reliability, and validity of this instrument is described in a separate report, (Itkin, Bramer and Richards, 1960).

### The Observation Checklist for Use of Examiners

The Cooperative Research Project Observation Checklist was developed as an aid to the examiner in recording his observations of the test behavior and physical characteristics of the educable mentally handicapped subject. It provides for an examiner's appraisal of the personality of the subject based upon interview, test behavior, classroom observation, and information from school personnel and school records. On the basis of these observations of behavior, examiners were required to categorize each child according to five patterns: (1) Passive, (2) Passive-Hostile, (3) Well-Adjusted, (4) Hyperactive, and (5) Active-Hostile. . A supplementary categorization form provides for categorizations of the child according to the seven personality patterns derived from the Behavior Checklist. The Observation Checklist also provides for ratings of each child's motivation in the test situation, and for the observer's record of the child's relationship with him in the test situation. The observer's report of the child's relationship with him and of his behavior in the test situation, and his observations of the subject's physical appearance yield two additional scales. The first is a scale on Relationship with the Examiner and the second a scale on Negative Physical Characteristics. The Observation Checklist and Personality Categorization forms are shown in Appendix A.

### The Interest Maturity Test

The Cooperative Research Project Interest Maturity Test was designed to gauge the level of social maturity of a child's interests. The child is required to choose between two activities from the same area of interest but of different levels of social maturity. There are different forms of the test for boys and girls. Items were selected on the basis of differentiation between the choices of normal and educable mentally handicapped subjects of different age groups. A report on this instrument is being prepared.

### The Cooperative Research Project Sociometric Questions

The Cooperative Research Project Sociometric Interview was devised for the purpose of getting an indication of how a child feels about his classmates and how he interprets their feelings toward him. This instrument consists of seven brief questions introduced by the words, "Tell me about the boys and girls in your room." The answers to the seven questions give a measure of a child's feelings of acceptance of his classmates and of his feelings of being accepted or rejected by them. Protocols are rated on these two factors by a psychologist using tables which have been provided as frames of reference for ratings. The ratings on the two factors are combined into a total score. A consistency check of ten protocols rated independently by seven examiners indicated that this instument has satisfactory consistency for use in comparing groups. This instrument is reported in Rooney (1961).

### Personality Evaluation

In the area of personality evaluation, we were concerned not only with differentiating both groups and individuals with regard to appropriate variables, but also with measuring change in personality functioning from year to year. Preliminary work with personality tests in the pilot study showed that limited reading ability prevented satisfactory response to paper and pencil tests and that limited comprehension interfered with verbally administered standardized personality scales. The EMH children of our entire age range, however, were able to give satisfactory responses to a picture story projective test consisting of a selection of cards drawn from the Thematic Apperception and Michigan Picture Tests.

In this projective test, the child is assigned the task of telling a story about a picture and is given a series of guide lines which if successfully followed will insure his fulfilling the demands of the task. He may meet these demands in varying degrees, or he may go beyond the minimum requirements and add variations of his own in the manner of literary creativity. The stories which the child creates in this limited, but life-like situation, may be considered a small sample of his real life performance.

The cards selected for the major experiment included some that depict child-school and child-authority situations as well as less structured situations which reveal other basic aspects of personality. The final set consisted of five cards from the TAT, five from the MPT, and two that appeared in both series. The set of twelve include two pairs of separate cards for boys and girls. Thus each child responded to a total of ten cards.

A variety of methods of interpreting the responses of subjects to these pictures are available in the literature. There is little data, however, giving norms for children of the age and intelligence of our group. It was therefore necessary to develop an objective method of scoring the child's production which would minimize errors resulting from subjective judgment. A further problem was the need for converting variables into numerical form suitable for statistical manipulation. These problems were handled by the development of a non-interpretive scoring device which schematizes each protocol, and by preparation of a manual to objectify scoring. The features of the subject's responses which have been reported by previous workers to be significant in the interpretation and scoring of protocols for these projective devices and which proved to be recognizable and objectively verifiable in the productions of our subjects were used as a basis for selection of aspects of the responses to be scored.

The next procedural step involved the development of personality scales. [illegible] criterion adjustment groups and preliminary analysis of data were followed by revision and refinement of the scales. Currently the series of scales includes: Gross Productivity, Effective Productivity, Ineffective Thinking, Positive Values Systems, Superego, Hostility, Insecurity, Passivity and Optimism. These scales are viewed as representing facets of personality that function dynamically; for example, a child with a high hostility score, even though basically hostile, may not express his hostility overtly because of fear of retaliation, a facet of personality which is represented by a high score on the Insecurity Scale. For this reason it is recommended that for individual evaluation the scales be interpreted interrelatedly rather than singly. However, scales used singly can provide a basis for meaningful comparison between groups and for measuring change over a period of time. For measuring differences between our experimental groups, eight scales were chosen as being most pertinent: Gross Productivity, Effective Productivity, Ineffective Thinking Scale, X or Abnormality Scale, Positive Values Systems, Hostility, Insecurity, and Passivity.

### Gross Productivity

The Gross Productivity score reflects effort and cooperation in the testing situation. It was hypothesized that the child who performs adequately in this situation would display similar willingness and ability to cooperate in other interpersonal situations.

### Effective Productivity

Basically, the Effective Productivity Scale represents a measure of the child's adequacy in following directions, his ability to utilize variety in content, and breadth of ideas. It was hypothesized that a child who successfully met the challenge of the story telling situation could be successful in other life situations.

### Ineffective Thinking Scale

The Ineffective Thinking Scale represents the inadequacy of the child's performance in dealing with the assigned task. At the most extreme, this represents total lack of response, whether caused by emotional or intellectual factors. Lesser degrees of inadequacy represent perfunctory or evasive responses which carry out few of the basic instructions. It was hypothesized that high scores on this scale would be associated with personality abnormality, and exclusion from the "Well-Adjusted" classification.

### Positive Values Scale (Va + Scale)

The Va + scale reflects the extent to which the child's stories show his concern with middle class values and goals.

Hostility

Hostility was defined as an oppositional tendency. In its lesser degrees, it includes feelings of anger, and a willingness to contradict or argue for principle. At a highest degree, it could include destruction of life and property.

Passivity

Passivity is defined as a receptive, unassertive pattern of reaction. In its positive phase it represents a sensitivity to and acceptance of cultural values. At the opposite extreme it represents submissive dependence or an unquestioning willingness to concede to outside pressures regardless of whether good or bad.

Insecurity.

Insecurity is defined as an apprehensive, uncertain, possible pessimistic, attitude. In minor degrees it represents a tendency to tread lightly and gauge "the lay of the land". In the extreme it represents a crippling anxiety.

## Testing Procedures

One full day of testing, interviewing, and observation was necessary for each of the subjects in the Matched-Pair Experiment. The examiner obtained information for filling out a Case Record Folder from school records and school personnel, interview with the child, and observation. A Structured Interview form was used to obtain information from the child. The examiner administered the following tests: Stanford Achievement Test or Metropolitan Readiness Test, the Chicago Test of General Information and General Comprehension, the Practical Reading Test, Word Recognition Test, Bender-Motor Gestalt Test, Thematic Apperception Test - Michigan Picture Test combination, Interest Maturity Test, and the Speiometric Interview. The Practical Reading Test and Sociometric Interview were not available during the first year of the experiment. They were used during the second and third testing only. The Home Background Factors rating scales were completed by the examiner on the basis of information obtained from school personnel and from his own observations and judgments. The examiner also completed an Observation Checklist, Speech Checklist, and Classroom and School Factors Data Sheets. On re-examinations, the examiner also completed a supplement to the Case Record Folder in instances in which there was a change in basic background conditions,and he also completed a Personality Categorization Sheet which paralelled the personality categories of the Behavior Checklist. Adjustment Rating Scales and Behavior Checklists were completed by teachers for each of the children in the Matched-Pair Experiment.

The examiners were required to note reasons for any missing data. Achievement test scoring was the responsibility of the examiner, but test scoring was rechecked by examiners and by the Statistical Section of the Project. The rating instruments filled out by teachers were scored by the Statistical Section. The scoring of General Information and Comprehension Tests, Ethical Comprehension Tests and Thematic Apperception Test-Michigan Picture Test protocols were reviewed by special committees. A check was maintained on test-retest intervals for both members of a matched-pair. Subjects in the matched-pair experiment who had not been retested with the Stanford-Binet for three or more years before the first contact with the Cooperative Research Project examiners were retested by a Project psychologist, and cases not appropriately matched on IQ were rematched.

## Characteristics of the Sample

The 681 cases in the Cooperative Research Project Matched-Pair Experiment had a mean chronological age of 11.35; a mean mental age of 7.71, and a median IQ of 69.78. The sex distribution was approximately 56 per cent males and 44 per cent females. The sample was predominantly a sample of low socio-economic status, approximately 89 per cent of the sample residing in areas of lower than average socio-economic status for the city as a whole. On Table 3, the total sample of cases tested in 1957 and 1958 and the sample of 140 matched pairs are compared with the total EMH population of the same IQ and age range, as of August 1957, on eight factors. This table indicates that our sample deviated from representativeness by being underrepresented in the low IQ's, in incidence of foreign language spoken in the homes, and in the incidence of cases of average or above average socio-economic status. Our sample is an urban sample of educable mentally handicapped children coming, in the main, from low income, high mobility areas of the city and from homes of below average and meager educational backgrounds. It is not a random sample of the entire EMH population. Approximately 11 per cent of our cases resided in community areas which may be considered average or above average for the city as a whole, as compared with approximately 18 per cent of the 2865 Bureau of Child Study cases in 1957. Our findings should therefore be considered in the main applicable to educable mentally handicapped children from lower socio-economic areas and of limited applicability with respect to educable mentally handicapped children from high socio-economic families. The deviation in representativeness may be ascribed to the method of selection of cases, since in matching of cases on a large number of factors, cases with factors occurring infrequently are difficult to match with others. Cases which lost their matches, however, were tested completely, and when possible were retested during the second year of the experiment. Therefore, the entire sample tested in the matched-pair experiment did not deviate as much from representativeness as did the matched pairs themselves.

Table 3

Comparison of Total Population of EMH Children of 7-13 Age Range and 50-74 IQ Range as of

August, 1957, with Cooperative Research Project 1957-58 Sample and with

140 Matched Pair Cases

| Factors | Total EMH Population August, 1957 | CRP 1957-58 Sample | 140 Matched Pairs | Population Compared with Sample | | | Population Compared with Matched Pairs | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | $X^2$ | df | P[a] | $X^2$ | df | P |
| **Age** | | | | | | | | | |
| 7-8 | 349 | 82 | 36 | | | | | | |
| 9-10 | 881 | 199 | 79 | | | | | | |
| 11-12 | 1056 | 242 | 109 | | | | | | |
| 13 | 565 | 157 | 56 | 3.778 | 3 | ns | .926 | 3 | ns |
| **Sex** | | | | | | | | | |
| Boys | 1677 | 386 | 152 | | | | | | |
| Girls | 1174 | 294 | 128 | .873 | 1 | ns | 2.159 | 1 | ns |
| **IQ** | | | | | | | | | |
| 50-59 | 385 | 39 | 6 | | | | | | |
| 60-64 | 496 | 99 | 33 | | | | | | |
| 65-69 | 811 | 185 | 93 | | | | | | |
| 70-74 | 1159 | 357 | 148 | 48.467 | 3 | .00001* | 42.224 | 3 | .00001* |
| **Placement** | | | | | | | | | |
| Special Class | 1983 | 367 | 140 | | | | | | |
| Regular Grades | 868 | 314 | 140 | 59.886 | 1 | .00001* | 41.257 | 1 | .00001* |
| **Community Socio-Economic Ratings** | | | | | | | | | |
| 1-2 (low) | 1804 | 445 | 194 | | | | | | |
| 3 | 529 | 154 | 64 | | | | | | |
| 4 Average | 286 | 59 | 22 | | | | | | |
| 5+ | 232 | 19 | 0 | 28.302 | 3 | .00001* | 27.955 | 3 | .00001* |

[a] Non-significant differences are designated ns.

*Designates significant differences from EMH population of August, 1957.

Table 3 (continued)

| Factors | Total EMH Population August, 1957 | CRP 1957-58 Sample | 140 Matched Pairs | Population Compared with Sample | | | Population Compared with Matched Pairs | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | $X^2$ | df | P[a] | $X^2$ | df | P |
| Rural South and Foreign Language Backgrounds | | | | | | | | | |
| School experience in Rural South | 565 | 151 | 50 | | | | | | |
| Foreign Language Background | 202 | 63 | 4 | | | | | | |
| Without Rural South or Foreign Language Backgrounds | 2084 | 466 | 226 | 6.605 | 2 | .05* | 14.908* | 2 | .001* |

[a]Non-significant differences are designated ns.
*Designates significant differences from EMH population of August, 1957.

# Chapter 3

## Correlates of Achievement

What level of academic achievement may be expected of the educable mentally handicapped child? The traditional answer to this question has been the use of the mental age grade expectancy formula, based upon Stanford-Binet Mental Age. According to this formula, an educable mentally handicapped child is expected to achieve academically approximately at the same level as a normal child of the same mental age. Thus, an educable mentally handicapped child with a mental age of eight is expected to achieve at the third grade level; one with the mental age of ten at the fifth grade level; one with the mental age of six is expected to be ready to learn to read, and so forth. Although this rule of thumb has been useful, there has been considerable dissatisfaction with the use of a single factor to predict expected achievement of mentally handicapped children. This dissatisfaction has ranged from almost complete rejection of the idea of any usefulness at all of a mental age grade expectancy formula to perplexity at the seeming inability of some EMH children to achieve in accordance with theoretical expectancy and astonishment that a few do better than expected.

In view of our findings of a correlation of approximately .64 between average reading on the Stanford Achievement Test and mental age of EMH children, complete rejection of the usefulness of the mental age grade expectancy concept is unwarranted. A correlation of this magnitude accounts for 40 per cent of the common variance between reading achievement and mental age. This is a substantial proportion of the variance. It leaves much to be explained, however. Why do some educable mentally handicapped children work up to and beyond the level of their theoretical expectancy, while others seem to make little or no progress in spite of a teacher's strongest interests and efforts? Can the relatively good work of some educable mentally handicapped children and the failure of others to achieve equally well be explained not merely or perhaps most importantly by the organization of their present educational program into special or regular class placement, but by such facts as broken homes, housing conditions, family socio-economic status, or neighborhood mores or attitudes? Are there factors within the home which determine whether an educable mentally handicapped child will or will not make maximum use of his potential ability and the educational program offered him, whatever it may be -- factors such as parental interest in education and pressure for achievement, cooperativeness with the school, attitudes toward the child's placement in special facilities for mentally handicapped children, or home atmosphere? Do factors such as visual, speech, hearing, dental, or neurological defects have a bearing upon the educable mentally handicapped youngster's achievement in school? Are there factors within his prior educational experience which determine his ability to achieve academically -- factors such as high pupil and teacher mobility, regularity of attendance, or schooling in regions where costs per pupil are relatively low? Or do personality attributes such as responsibility, motivation, aggressiveness, or passivity have important bearing upon the mentally handicapped child's ability to achieve?

Teachers and administrators of special programs for educable mentally handicapped children as well as teachers and principals having mentally handicapped children in their regular classrooms are interested in these questions. Answers to these questions may help them understand the failure of a child to achieve up to his theoretical level of expectancy. They may suggest actions which might be taken to help a particular child or to improve an over-all program.

The studies of achievement and adjustment of educable mentally handicapped children reported in this Chapter and in Chapter 4 have two purposes; one, to cast additional light upon the problem of why some mentally handicapped children achieve academically up to and even beyond the level of their theoretical expectation while others may be classified as virtual non-achievers in spite of apparently similar ability to learn: and, two, to identify factors which might have a biasing effect upon comparisons of the progress of educable mentally handicapped children in special classes with those in regular grades. The subjects in these studies of correlates of achievement and adjustment of EMH children consisted of all of the children tested in the Matched-Pair Experiment and retested on year later, whether or not they continued to be matched with another pupil. Two groups of pupils of the same sex and of the same tested mental age were compared, one an initially achieving group and the other an initially non-achieving group. In the first comparison, reading, arithmetic, and general information and general comprehension at the time of beginning the experiment were used as a multiple criterion of achievement. In the second comparison, achievement in reading and arithmetic only were used as a multiple criterion. In a third study, progress in reading and arithmetic over a one-year period was used as a criterion of achievement, the two groups being compared consisting of one which made rapid progress during the one-year test-retest interval and another which made virtually no progress during the same period of time.

Although these various groups are designated hereafter as "high-achieving" and "low-achieving" groups, it must be remembered that achievement was rated as high or low with reference to the rated M.A. of the child. A child was designated as a "high-achiever" because his achievement scores were high relative to his rated M.A. Therefore, if for any substantial proportion of pupils there was a suggestion that the M. A. was an underestimate of actual and inherent potential, the group designated as "high-achievers" may have to be regarded more accurately as the group whose IQ's are dubious."

The first of the comparisons of the social, emotional, physical, and psychological backgrounds of achieving and non-achieving EMH children utilized a multiple criterion of achievement. In the major study, a comprehensive criterion of achievement was wanted, one that reflected not only achievement in reading, but in arithmetic and in general information and comprehension as well. For a child to be included in the high achieving group, it was now required not only that he stand out among others of his own mental ability with respect to his performance in reading, but also that he be above average in arithmetic and general information and comprehension. For a child to be included in the non-achieving group, it was required not only that he be conspicuously poor in reading, but that he also be below average in arithmetic and general achievement.

### A Comparison of Achieving and Non-Achieving EMH Children in Terms of Three Criteria of Achievement.

In the selection of criterion groups on achievement, all cases in the Matched-Pair Experiment were first stratified according to sex. Each sex group was next stratified into one-half year mental age intervals as of date of initial testing by the Cooperative Research Project, beginning with MA's of 6-0. The half year MA groups of boys and girls were next examined separately. To qualify for the high achievement group, subjects were required to be in the upper 30 per cent in Average Reading on the Stanford Achievement Test for their half-year MA interval and either in the upper 30 per cent for their interval in

Average Arithmetic and above the median on the GICT, or in the upper 30 per cent on the GICT and above the median on Average Arithmetic. For MA intervals between 6-0 and 6-11, the lowest 30 per cent for each interval on the Metropolitan Reading Readiness Test was substituted for the Average Reading Score on the Stanford Achievement Test, since more than 30 per cent of these groups received scores of 1.0 on Average Reading. The Ethical Comprehension subtest of the GICT was not included in the GICT total score used in selecting the criterion groups.

Findings

A comparison of the achieving group and of the non-achieving group in terms of CA, MA, IQ, and scores in reading, arithmetic, and the General Information and Comprehension Test showed the two groups to be identical in reported MA, but markedly different in achievement, (Table 4). The achievers were on the average one-half year older than the non-achievers, and two and one-half to three points lower in IQ. In achievements, the achieving group were on the average at the the 3B level in reading and arithmetic. The non-achieving boys were reading on the average at a 1B level and the non-achieving girls at a 1A level, and mean scores in arithmetic for both the non-achieving boys and girls were at the 1A level. The GICT scores of the achievers and non-achievers differed by more than a two-year difference.

Here, then, were two groups of educable mentally handicapped children, according to their tested mental ability, reputedlycomparable in ability to learn, with theoretical expectancy on the average at the third grade level. One group was achieving consistently in reading, arithmetic and general information and comprehension approximately at theoretical expectancy. The children in the other group were virtual non-achievers, with average performance at the first grade level. How did the achievers and non-achievers compare with respect to their social and educational backgrounds?

## Table 4

### Description of Criterion Achievement Groups in Terms of CA, MA, IQ, and Achievements in Reading, Arithmetic, and GICT

| Sex | | Achievers | | Non-Achievers | |
|---|---|---|---|---|---|
| | | Upper Criterion Group Read., Arith., GICT | Upper Criterion Group -Read.,Arith. | Lower Criterion Group Head., Arith.,GICT | Lower Criterion Group Read.,Arith. |
| Sex | | | | | |
| | Boys | 60 | 65 | 60 | 65 |
| | Girls | 40 | 49 | 40 | 49 |
| CA, Mean, | Boys | .11.975 | 12.059 | 11.458 | 11.381 |
| | Girls | .11.945 | 11.840 | 11.296 | 11.214 |
| CA, SD, | Boys | . 1.58 | 1.579 | 1.73 | 1.637 |
| | Girls | . 1.72 | 1.894 | 1.78 | 1.786 |
| MA, Mean, | Boys | . 8.08 | 8.182 | 8.05 | 7.979 |
| | Girls | . 7.76 | 7.748 | 7.71 | 7.648 |
| SD, | Boys | . 1.12 | 1.119 | 1.13 | 1.105 |
| | Girls | . 1.13 | 1.1754 | 1.25 | 1.263 |
| IQ, Mean, | Boys | .68.02 | 68.308 | 70.40 | 70.246 |
| | Girls | .65.95 | 66.265 | 68.82 | 68.469 |
| SD, | Boys | . 5.04 | 5.092 | 3.05 | 3.432 |
| | Girls | . 6.46 | 4.946 | 5.39 | 6.155 |
| Stanford Average Reading, Mean, | Boys | 3.02 | 3.110 | 1.35 | 1.335 |
| | Girls | 3.25 | 3.187 | 1.69 | 1.594 |
| Stanford Average Reading, SD, | Boys | .821 | .840 | .431 | .450 |
| | Girls | .915 | .991 | .759 | .749 |
| Stanford Arithmetic,Mean, | Boys | 3.27 | 3.374 | 1.692 | 1.657 |
| | Girls | 3.39 | 3.292 | 1.80 | 1.712 |
| Stanford Arithmetic, SD, | Boys | 1.063 | .971 | .618 | .587 |
| | Girls | 1.04 | 1.122 | .730 | .787 |
| GICT, Mean, | Boys | 49.83 | 48.52 | 29.33 | 31.25 |
| | Girls | 45.38 | 45.02 | 27.00 | 30.28 |
| GICT, SD, | Boys | 13.18 | 13.98 | 13.28 | 12.77 |
| | Girls | 12.64 | 13.71 | 14.70 | 14.00 |

The most striking differences in the backgrounds of the achieving and non-achieving groups (Table 5) were a school history showing educational experience in the Rural South, and recorded clinical impressions either on the part of the Bureau of Child Study psychologists or of Cooperative Research Project examiners that the IQ's of the achieving children had been underestimated by their last psychological examinations. Both rural South educational backgrounds and questioned IQ's occurred more frequently in the achieving than in the non-achieving group. In the pilot study, which was made in the Spring of 1957, a significantly larger proportion of children who had previously attended school in the Rural South was found in the group of poorly achieving readers. Accordingly, one of the factors on which our cases in the major experiment were matched was a history of school experience in the rural South. It was hypothesized that children with a rural South background would be handicapped initially in taking achievement and learning ability tests. With exposure to education in systems where the per capita cost per pupil was higher and the educational facilities more adequate, it was expected that they would progress at a rate beyond that indicated in a psychological examination administered soon after their arrival from the South. This expectation is strongly confirmed by our present data. As shown in Table 5, the children with educational experience in the rural South now were represented in a much greater proportion in the achieving group than in the non-achieving group. Since cases for the present study were selected during the Summer of 1957, most of the psychological tests administered to the children in this study were given prior to August, 1957. While more than twenty per cent of the Pilot Study children with rural South educational backgrounds had lived in Chicago less than two years, less than ten per cent of the children in the present experiment who had rural South educational backgrounds were similarly recent arrivals. Thus, it appears that a considerable proportion of children with rural South educational experience who test in the educable mentally handicapped range may be expected to catch up rather quickly, once they are exposed to more adequate educational opportunities. The questionable validity of the IQ's of achieving children with rural South educational backgrounds is probably the most important factor explaining the higher frequency of achieving children with eight semesters or less of residence in Chicago. This period of time permits re-evaluation of the learning abilities of slow-learning children, and therefore their elimination from the educable mentally handicapped group. Presumably, children who have been in Chicago for as many as nine semesters and still are classified as educable mentally handicapped are more likely to be in fact mentally handicapped than are the more recent arrivals.

The findings with respect to the children from the rural South and the greater proportion of cases in the achieving group with the validities of the IQ's questioned suggested that a major factor discriminating between the achieving group and the non-achieving group was the questionable validity of their IQ's and therefore of the mental ages of the achieving group. As the findings on correlates of achievement reported in Table 5 are examined, therefore, one should consider the possibility that the true IQ's of some of the children in the achieving group may not be so low as suggested by their performance. Therefore, the average mental ages of the achieving group might actually be higher than that of the non-achieving group.

The first group of factors in Table 5 which discriminate between the achieving and the non-achieving EMH children appear to be associated with underestimation of mental age. These include rural South Educational background, questioned validity of IQ's, and high scores on the Ethical Comprehension Test.

The higher scores of the achievers on the Cooperative Research Project Ethical Comprehension Test were consistent with teachers' ratings and Behavior Checklist scale scores which indicated that the achieving group children were more responsible, better motivated, and better adjusted than the non-achieving EMH children. The relationship between the Ethical Comprehension Test score and achievement, however, probably is in part accounted for by the relationships between the Ethical Comprehension Test and mental age and between the Ethical Comprehension Test and GICT scores. In the manual of the GICT and the Ethical Comprehension Test, coefficients of correlation of .56 are reported between the Ethical Comprehension Test and Mental Age, and of .59 between the Ethical Comprehension Test and GICT. (Mullen, Itkin and others, 1960).

A second set of factors discriminating between the achieving and non-achieving educable mentally handicapped children appears to be associated with family disintegration. Singly, factors such as broken homes, inadequate housing, and crowded living conditions appeared about as frequently in the backgrounds of the achieving as of the non-achieving groups. Four factors, several of which occurring together were considered indicative of family instability, were combined into a family stability syndrome. These factors were: (1) high mobility, as indicated by four or more changes of school; (2) broken homes, defined in terms of a child's living with his father alone, mother alone, relatives, adoptive parents, foster parents, or in a children's home; (3) inadequate housing, defined in terms of rooming houses, basement apartments, or apartments behind or over stores; and (4) extreme overcrowding, defined in terms of persons per room ratio of 2.01 or higher. The occurrence of any one of the four instability factors in a case did not differentiate significantly between the achieving group and the non-achieving group. A significantly greater proportion of the non-achieving group than of the achieving group, however, had two or more of these instability factors in their history. Contact with social agencies and poor school attendance were also more frequent in the non-achieving than in the achieving group.

A third set of factors discriminating between the achieving and the non-achieving educable mentally handicapped children appeared to be associated with very low socio-economic status and cultural deprivation. Pupils whose families who resided in community areas of very low socio-economic status, and whose families were given low ratings by examiners on educational aspiration level and family pressure for school achievement were found relatively more frequently in the low achievement group.

While in the relatively homogeneous sample of low socio-economic status in this study parental education and parental occupation did not make a significant over-all difference between the achieving and non-achieving groups, a scale which combined several aspects of socio-economic status did differentiate the two groups. This scale contained six points:

(1) Broken home; mother sole support, on ADC or unskilled;

(2) Intact home; father unskilled;

(3) Intact home; both parents working, both unskilled;

(4) Broken home; mother sole support, semi-skilled or higher;

(5) Intact home; both parents working, father semi-skilled;

(6) Intact home; father skilled or higher.

More of the non-achieving group were supported by mothers on ADC or employed in unskilled work, and more of the achieving group came from intact families with semi-skilled or skilled fathers as their source of support. Ten of twelve children in the two criterion groups who lived in public housing were non-achievers. It was not clear from our data whether this relationship may be explained in terms of low socio-economic status or in terms of other factors.

Examiners rated the family educational aspiration level of the non-achieving group as lower than that of the achieving group. They judged more parents of the non-achieving group as having too little interest in the child's achievements, while more of the achieving group were thought to exert undue pressure for achievement. These ratings are consistent with the poorer school attendance of the non-achieving group.

Over-all community socio-economic status seemed to make a difference between the academic achievement of boys and of girls. Boys from the lowest socio-economic community areas tended to achieve more poorly for their tested mental ages than boys from the higher socio-economic communities. This relationship was almost reversed with respect to girls. Girls from the lowest socio-economic communities tended to do better for their level of ability than girls in socio-economically higher areas. This relationship was not statistically significant, however, and might have been accounted for by chance.

Our data on medically diagnosed psychiatric, speech, and neurological defects were meager, but diagnosed cases with these defects occurred more frequently in the non-achieving group than in the achieving group. On the other hand, the occurrence of visual defects did not seem to discriminate between our two criterion groups.

A fifth set of significant positive findings relates to psychological and personality maladjustment. As compared with the non-achievers, the achieving group was rated better adjusted by their teachers, better in their over-all classroom work, more aggressive, better motivated, more responsible, and less passive. Some of these ratings were derived from the Adjustment Rating Scales; others were derived from the Cooperative Research Project Behavior Checklist, both completed by the child's classroom teacher. More of the achieving group were found in the Well-Adjusted and Active-Aggressive categories of the Behavior Checklist, while more of the non-achieving group were in the Passive and Passive-Aggressive categories.

Examiner's over-all appraisals of pupil adjustment also discriminated between the achieving and non-achieving group. A larger proportion of the achieving group was categorized well-adjusted by Cooperative Research Project Examiners, while a larger proportion of the non-achieving group received categorizations other than well-adjusted. A greater proportion of the non-achievers received high scores on the X Scale and Ineffective Thinking Scale and low scores on the Gross Productivity Scale based on analysis of the Thematic Apperception Test-Michigan Picture Test protocols.

## Table 5

## Factors Related to Achievement of Mentally Handicapped Children

| Factors: | I<br>Criterion Groups based on Reading, Arithmetic and General Information and Comprehension | | | II<br>Same Criterion as I with Rural South and IQ Questioned Cases Eliminated | | | III<br>Criterion Groups Based on Reading and Arithmetic Achievement only | | |
|---|---|---|---|---|---|---|---|---|---|
| Group I Factors: Factors with implications for underestimation of Mental Age | | | | | | | | | |
| Rural South Educational Background: | .Non-Achievers | Achievers | .Totals | Non-Achievers | .Achievers | .Totals | Non-Achievers | .Achievers | . Totals |
| Educational Experience in Rural South | 13 | 39 | 52 | —— | —— | —— | 19 | 44 | 63 |
| Without Rural South or Foreign Language Backgrounds<br>Totals | $\frac{83}{96}$ | $\frac{53}{92}$ | $\frac{136}{188}$ | | | | $\frac{89}{108}$ | $\frac{59}{103}$ | $\frac{148}{211}$ |
| | $X^2$=18.1 | df= 1 | P= .0001 | | | | $X^2$=14.715 | df= 1 | P=.001 |
| Validity of IQ Questioned: | | | | | | | | | |
| Validity of IQ Questioned by Bureau of Child Study or Cooperative Research Project | 18 | 44 | 62 | —— | —— | —— | 18 | 47 | 65 |
| Validity of IQ not Questioned<br>Totals | $\frac{82}{100}$ | $\frac{56}{100}$ | $\frac{138}{200}$ | | | | $\frac{96}{114}$ | $\frac{67}{114}$ | $\frac{163}{228}$ |
| | $X^2$=14.61 | df=1 | P=.0001 | | | | $X^2$=16.871 | df=1 | P=.0001 |
| Ethical Comprehension Test Scores: | | | | | | | | | |
| Above Median Scores | 35 | 63 | 98 | 29 | 25 | 54 | 33 | 57 | 90 |
| Below Median Scores | $\frac{64}{99}$ | $\frac{36}{99}$ | $\frac{100}{198}$ | $\frac{41}{70}$ | $\frac{13}{38}$ | $\frac{54}{108}$ | $\frac{57}{90}$ | $\frac{31}{88}$ | $\frac{88}{178}$ |
| | $X^2$=14.729 | df= 1 | P=.0001 | $X^2$=4.912 | df=1 | P=.05 | $X^2$ = 12.59 | df=1 | P=.001 |

2

Factors Related to Achievement of Mentally Handicapped Children. P. 2. Table 5, Page 2

| Group II<br>Factors: Factors Associated with Low Family Integration | I<br>Non-Achievers | I<br>Achievers | I<br>Totals | II<br>Non-Achievers | II<br>Achievers | II<br>Totals | III<br>Non-Achievers | III<br>Achievers | III<br>Totals |
|---|---|---|---|---|---|---|---|---|---|
| Contact with Social Agencies: | | | | | | | | | |
| Record of Contact with Social Agencies | 57 | 31 | 112 | 55 | 22 | 77 | 62 | 36 | 98 |
| No record of Contact with Social Agencies | 43 | 69 | 88 | 16 | 16 | 32 | 52 | 78 | 130 |
| Total | 100 | 100 | 200 | 71 | 38 | 109 | 114 | 114 | 228 |
| | $X^2$= 12.683 | df= 1 | P= .001 | $X^2$=3.676 | df=1 | P=.054 | $X^2$= 11.185 | df=1 | P=.001 |
| School Attendance: | | | | | | | | | |
| Average Attendance Two Previous Semesters | | | | | | | | | |
| 90 or more days | 47 | 67 | 114 | 36 | 21 | 57 | 56 | 80 | 136 |
| 80 to 89 days | 27 | 21 | 48 | 19 | 11 | 30 | 32 | 22 | 54 |
| 79 or fewer days | 25 | 9 | 34 | 15 | 4 | 19 | 25 | 10 | 35 |
| Total | 99 | 97 | 196 | 70 | 36 | 106 | 113 | 112 | 225 |
| | $X^2$=11.778 | df=2 | P=.01 | $X^2$=1.716 (Not significant) | df=1 | P=.41 | $X^2$=12.511 | df=2 | P=.01 |
| Family Stability Syndrome: | | | | | | | | | |
| One or no Instability Factors in Case | 69 | 87 | 156 | 59 | 32 | 91 | 91 | 90 | 181 |
| Two or More Instability Factors in Case | 31 | 13 | 44 | 12 | 6 | 18 | 23 | 24 | 47 |
| Total | 100 | 100 | 200 | 71 | 38 | 109 | 114 | 94 | 228 |
| | $X^2$= 8.4 | df=1 | P=..01 | $X^2$=.015 (Not significant) | df=1 | P=.932 | $X^2$=.027 (Not significant) | df=1 | P=.87 |

* Family Instability defined in terms of four factors:

1. High mobility: four or more changes of school.
2. Broken home.
3. Inadequate housing: rooming houses, basements, or behind or over stores.
4. Excessive overcrowding: Person-per-room ratio 2.01 or higher.

Factors Related to Achievement of Mentally Handicapped Children P. 3 Table 5

Group III - Factors Associated with Very Low Socio-Economic Status and Cultural Deprivation

| : | I | | | II | | | III | | |
|---|---|---|---|---|---|---|---|---|---|
| | Non-Achievers | Achievers | Totals | Non-Achievers | Achievers | Totals | Non-Achievers | Achievers | Totals |
| **Contact with Public Assistance Agencies:** | | | | | | | | | |
| No Social Agency Contact | 43 | 69 | 112 | 16 | 16 | 32 | 52 | 78 | 130 |
| Record of Contact with Public Assistance Agencies | 36/79 | 22/91 | 58/170 | 30/46 | 10/26 | 40/72 | 38/90 | 27/105 | 65/195 |
| | $X^2$= 7.685 | df=1 | P= .01 | $X^2$=4.065 | df=1 | P=.05 | $X^2$=5.22 | df=1 | P=.05 |
| **Public Housing:** | | | | | | | | | |
| Not Residing in Public Housing Facilities | 59 | 64 | 123 | 39 | 17 | 56 | 66 | 74 | 140 |
| Residing in Public Housing Facilities | 10/69 | 2/66 | 12/135 | 9/48 | 2/19 | 11/67 | 10/76 | 3/77 | 13/153 |
| | Fishers' Exact Test | | P= .02 | Fishers' Exact Test (Not significant) | | P=.223 | Fishers' Exact Test (Not significant) | | P=.078 |
| **Community Socio-Economic Status: (Boys only)** | | | | | | | | | |
| Residence in S-E Categories III or + | 12 | 23 | 35 | 8 | 13 | 21 | 17 | 22 | 39 |
| Residence in S-E Categories I or II (lowest) | 48/60 | 37/60 | 85/120 | 34/42 | 10/23 | 44/65 | 48/65 | 43/65 | 91/130 |
| | $X^2$= 4.03 | df= .05 | P=.02 | $X^2$=7.906 | df=1 | P=.01 | $X^2$=0.586 (Not significant) | df=1 | P=.44 |
| **Family Socio-Economic Status Scale:** | | | | | | | | | |
| Intact Family, Father Skilled or higher | 5 | 16 | 21 | 8 | 7 | 15 | 15 | 17 | 32 |
| Intact Family, Father Semi-Skilled | 6 | 14 | 20 | 9 | 10 | 19 | 14 | 15 | 29 |
| Intact Family, Father Unskilled | 19 | 22 | 41 | 13 | 1 | 14 | 24 | 27 | 51 |
| Intact Family, Both Parents Unskilled | 7 | 8 | 15 | 9 | 5 | 14 | 12 | 9 | 21 |
| Supported by Mother only, ADC or Unskilled | 33/70 | 23/83 | 56/153 | 26/65 | 9/32 | 35/97 | 28/93 | 22/90 | 50/183 |
| | $X^2$= 10.006 | df=4 | P=.05 | $X^2$=9.6952 | df=1 | P=.05 | $X^2$= 1.43 (Not significant) | df=4 | P=.838 |

Factors Related to Achievement of Mentally Handicapped Children. P.4., Table 5

| Group III (Cont.) | I<br>Non-Achievers | I<br>Achievers | I<br>Totals | II<br>Non-Achievers | II<br>Achievers | II<br>Totals | III<br>Non-Achievers | III<br>Achievers | III<br>Totals |
|---|---|---|---|---|---|---|---|---|---|
| **Examiner's Ratings of Family Educational Aspiration:** | | | | | | | | | |
| **High School Graduation , at Least, Hoped for** | 27 | 36 | 63 | 18 | 13 | 31 | 22 | 32 | 54 |
| **Children not Expected to Finish High School, or Education not Considered Important** | | | | | | | | | |
| Total | $\frac{37}{64}$ | $\frac{14}{50}$ | $\frac{51}{114}$ | $\frac{20}{38}$ | $\frac{6}{19}$ | $\frac{26}{57}$ | $\frac{32}{54}$ | $\frac{15}{47}$ | $\frac{47}{101}$ |
| | $X^2=8.92$ | df=1 | P=.01 | $X^2=1.494$<br>(Not significant) | df=1 | P=.22 | $X^2=6.49$ | df=1 | P=.05 |
| **Examiner's Ratings of Home Pressure for Achievement:** | | | | | | | | | |
| **Undue or Intense Pressure** | 7 | 12 | 19 | 5 | 3 | 8 | 11 | 14 | 25 |
| **Interest in Achievement** | 32 | 37 | 69 | 28 | 17 | 45 | 34 | 43 | 77 |
| **Too Little Interest** | 22 | 13 | 35 | 17 | 4 | 21 | 25 | 15 | 40 |
| **Complete Lack of Interest** | $\frac{10}{71}$ | $\frac{2}{64}$ | $\frac{12}{135}$ | $\frac{6}{56}$ | $\frac{1}{25}$ | $\frac{7}{86}$ | $\frac{11}{81}$ | $\frac{4}{76}$ | $\frac{15}{157}$ |
| | $X^2=8.987$ | df=3 | P=.05 | $X^2=3.437$<br>(Not Significant) | df=3 | P=.333 | $X^2=7.028$<br>(Not Significant) | df=3 | P=.071 |

Factors Related to Achievement of Mentally Handicapped Children. P. 5., Table 5

Group IV - Factors Associated with Personality Integration or Personality Maladjustment

| | I | | | II | | | III | | |
|---|---|---|---|---|---|---|---|---|---|
| | Non-Achievers | Achievers | Totals | Non-Achievers | Achievers | Totals | Non-Achievers | Achievers | Totals |
| Adjustment Rating Scale Score (Teacher Ratings) | | | | | | | | | |
| Above Median Score | 40 | 57 | 97 | 35 | 19 | 54 | 45 | 66 | 111 |
| Below Median Score | 57 | 41 | 98 | 34 | 18 | 52 | 67 | 45 | 112 |
| Total | 97 | 98 | 195 | 69 | 37 | 106 | 112 | 111 | 223 |
| | $X^2$=4.93 | df=1 | P= .05 | $X^2$= .02 (Not significant) | df=1 | P=.88 | $X^2$=7.55 | df=1 | P=.01 |
| Teacher Rating on Over-all Classroom Work: | | | | | | | | | |
| Above Median Rating | 37 | 61 | 98 | 31 | 23 | 54 | 43 | 68 | 111 |
| Below Median Rating | 60 | 37 | 97 | 38 | 14 | 52 | 69 | 43 | 112 |
| Total | 97 | 98 | 195 | 69 | 37 | 106 | 112 | 111 | 223 |
| | $X^2$=10.38 | df=1 | P=.001 | $X^2$=2.33 (Not significant) | df=1 | P= .127 | $X^2$=10.76 | df=1 | P=.001 |
| Well-Adjusted Scale, from Behavior Checklist: (Teacher report) | | | | | | | | | |
| Above Median | 39 | 56 | 95 | 31 | 21 | 52 | 47 | 64 | 111 |
| Below Median | 57 | 39 | 96 | 37 | 15 | 52 | 63 | 47 | 110 |
| Total | 96 | 95 | 191 | 68 | 36 | 104 | 110 | 111 | 221 |
| | $X^2$= 5.70 | df=1 | P=.05 | $X^2$=1.062 | df=1 | P=.29 | $X^2$= 4.34 | df=1 | P=.05 |
| Passive Scale, Behavior Checklist (Teacher report) | | | | | | | | | |
| Above Median | 57 | 39 | 96 | 37 | 14 | 51 | 63 | 47 | 110 |
| Below Median | 38 | 56 | 94 | 30 | 22 | 52 | 47 | 64 | 111 |
| | 95 | 95 | 190 | 67 | 36 | 103 | 110 | 110 | 221 |
| | $X^2$=6.085 | df=1 | P=.05 | $X^2$= 1.88 (Not significant) | df=1 | P=.168 | $X^2$=4.37 | df=1 | P=.05 |

Factors Related to Achievement of Mentally Handicapped Children. P 6., Table 5

| Group IV (Cont.) | I<br>Non-Achievers | I<br>Achievers | I<br>Totals | II<br>Non-Achievers | II<br>Achievers | II<br>Totals | III<br>Non-Achievers | III<br>Achievers | III<br>Totals |
|---|---|---|---|---|---|---|---|---|---|
| Aggressive Scale, Behavior Checklist: (Teacher report) | | | | | | | | | |
| Above Median | 56 | 39 | 95 | 40 | 18 | 58 | 60 | 50 | 110 |
| Below Median | 39 | 56 | 95 | 27 | 18 | 45 | 50 | 61 | 111 |
| Totals | 95 | 95 | 190 | 67 | 36 | 103 | 110 | 111 | 221 |
| | $X^2=5.389$ | df=1 | P=.05 | $X^2=.545$ (Not significant) | df=1 | P=.459 | $X^2=1.63$ (Not significant) | df=1 | P=.20 |
| Motivation Scale, Behavior Checklist: (Teacher report) | | | | | | | | | |
| Above Median | 40 | 56 | 96 | 31 | 21 | 52 | 47 | 63 | 110 |
| Below Median | 56 | 39 | 95 | 37 | 15 | 52 | 63 | 48 | 111 |
| Totals | 96 | 95 | 191 | 68 | 36 | 104 | 110 | 111 | 221 |
| | $X^2=5.033$ | df= 1 | P=.05 | $X^2=1.062$ (Not significant) | df=1 | P=.29 | $X^2=3.80$<br>$X^2=4.34$ | df=1<br>df=1 | P=.051<br>P=.05* |
| Responsibility Scale, Behavior Checklist: (Teacher report) | | | | | | | | | |
| Above Median | 37 | 59 | 96 | 29 | 19 | 48 | 44 | 66 | 110 |
| Below Median | 59 | 36 | 95 | 39 | 17 | 56 | 66 | 45 | 111 |
| Totals | 96 | 95 | 191 | 68 | 36 | 104 | 110 | 111 | 221 |
| | $X^2=9.68$ | df=1 | P=.05 | $X^2=.607$ (Not Significant) | df=1 | P=.438 | $X^2=7.60$ | df=4 | P=.01 |
| Central Personality Patterns from Behavior Checklist: | | | | | | | | | |
| Well Adjusted | 16 | 28 | 44 | 12 | 10 | 22 | 22 | 32 | 54 |
| Moderately Well Adjusted plus Mildly Aggressive | 45 | 40 | 85 | 31 | 15 | 46 | 47 | 47 | 94 |
| Passive | 10 | 5 | 15 | 5 | 2 | 7 | 11 | 7 | 18 |
| Passive-Aggressive | 17 | 7 | 24 | 13 | 4 | 17 | 17 | 9 | 26 |
| Active-Aggressive plus Hyperactive | 8 | 14 | 22 | 7 | 5 | 12 | 13 | 15 | 28 |
| | 96 | 94 | 190 | 68 | 36 | 104 | 110 | 110 | 220 |
| | $X^2=11.037$ | df= 4 | P=.05 | $X^2=2.537$ (Not significant) | df=4 | P=.644 | $X^2=5.34$ (Not significant) | df=4 | P=.253 |

*Without Yates' Correction

Factors Related to Achievement of Mentally Handicapped Children, Table 5, Page 7

| | I | | | II | | | III | | |
|---|---|---|---|---|---|---|---|---|---|
| Group IV continued | Non-Achievers | Achievers | Totals | Non-Achievers | Achievers | Totals | Non-Achievers | Achivers | Totals |
| Personality Categorization for Observation Checklist: (Examiner Ratings) | | | | | | | | | |
| Categorized Well-Adjusted | 45 | 61 | 106 | 32 | 25 | 57 | 57 | 69 | 126 |
| Categorized Other than Well Adjusted | 34 | 18 | 52 | 23 | 6 | 29 | 36 | 23 | 59 |
| Totals | 79 | 79 | 158 | 55 | 31 | 86 | 93 | 92 | 185 |
| | $X^2$=6.45 | df=1 | P=.05 | $X^2$=3.527<br>(Not significant) | df=1 | P=.061 | $X^2$=3.39<br>$X^2$=4.00 | df=1<br>df=1 | P=.066<br>P=.05* |
| Motivation Rating from Observation Checklist: (Examiner) | | | | | | | | | |
| Interest Adequately Sustained | 55 | 74 | 129 | 39 | 29 | 68 | 70 | 82 | 152 |
| Interest not Sustained Adequately | 45 | 26 | 71 | 13 | 2 | 15 | 20 | 6 | 26 |
| Totals | 100 | 100 | 200 | 52 | 31 | 83 | 90 | 88 | 178 |
| | $X^2$=7.075 | df=1 | P=.01 | $X^2$=3.347<br>Fisher's Exact Test | df=1 | P= .067<br>P= .029 | $X^2$=7.27 | df=1 | P=.01 |
| Psychiatric Defects; | | | | | | | | | |
| Psychiatric Defects Neither Spspected nor Diagnosed | 91 | 98 | 189 | 65 | 37 | 102 | 105 | 111 | 216 |
| Psychiatric Defects Suspected or Diagnosed | 9 | 2 | 11 | 6 | 1 | 7 | 9 | 3 | 12 |
| Totals | 100 | 100 | 200 | 71 | 38 | 109 | 114 | 114 | 228 |
| | Fisher's Exact Test | | P=.03 | Fisher's Exact Test | | P=.045 | Fisher's Exact Test | | P=.067 |
| Thematic Apperception Test-Michigan Pciture Test Scale Scores: | | | | | | | | | |
| Abnormality Scale (X Scale) | | | | | | | | | |
| Above Median Scores | 50 | 28 | 78 | — | — | — | — | — | — |
| Below Median Scores | 34 | 46 | 80 | — | — | — | — | — | — |
| | 84 | 74 | 158 | | | | | | |
| | $X^2$= 6.47 | df=1 | P=.05 | | | | | | |

*Without Yates' Correction

Factors Related to Achievement of Mentally Handicapped Children, Table 5, Page 8

Group IV Cont.

|  | I<br>Non-Achievers | I<br>Achievers | I<br>Total | II<br>Non-Achievers | II<br>Achievers | II<br>Total | III<br>Non-Achievers | III<br>Achievers | III<br>Total |
|---|---|---|---|---|---|---|---|---|---|
| **Ineffective Thinking Scale:** |  |  |  |  |  |  |  |  |  |
| Above Median Scores | 47 | 29 | 76 | — | — | — | — | — | — |
| Below Median Scores | 37 | 45 | 82 | — | — | — | — | — | — |
| Totals | 84 | 74 | 158 |  |  |  |  |  |  |
|  | X2=3.63 | df=1 | P=.057 |  |  |  |  |  |  |
| **Gross Productivity Score:** | $X^2$=4.42 | df=1 | P=.05* |  |  |  |  |  |  |
| Upper Quartile | 21 | 25 | 46 | — | — | — | — | — | — |
| Lower Quartile | 27 | 9 | 36 | — | — | — | — | — | — |
| Totals | 48 | 34 | 82 |  |  |  |  |  |  |
|  |  | $X^2$=6.00 | df= 1 | P=.05 |  |  |  |  |  |

* Without Yates Correction

Factors Related to Achievement of Mentally Handicapped Children, Table 5, Page 9

Group V- Factors Associated with Physical Handicap

| | I | | | II | | | III | | |
|---|---|---|---|---|---|---|---|---|---|
| | Non-Achievers | Achievers | Totals | Non-Achievers | Achievers | Total | Non-Achieverw | Achievers | Total |
| Neurological Defects: | | | | | | | | | |
| Neurological Defects Medically Diagnosed | 6 | 0 | 6 | 5 | 0 | 5 | 6 | 0 | 6 |
| Neurological Defects Neither Diagnosed nor Suspected | 94/100 | 100/100 | 194/200 | 63/68 | 35/35 | 98/103 | 108/114 | 114/114 | 222/228 |
| | Fisher's Exact Test | | P=.015 | Fisher's Exact Test (Not Significant) | | P=.119 | Fisher's Exact Test | | P=.015 |
| Speech Defects: | | | | | | | | | |
| Speech Defects Medically Diagnosed | 5 | 0 | 5 | 4 | 0 | 4 | 4 | 1 | 5 |
| No Medically Diagnosed Speech Defects in Records | 95/100 | 100/100 | 195/200 | 67/71 | 38/38 | 105/109 | 110/114 | 113/114 | 223/228 |
| | Fisher's Exact Test | | P=.029 | Fisher's Exact Test (Not Significant) | | P=.175 | Fisher's Exact Test (Not Significant) | | P=.184 |

Factors Related to Achievement of Mentally Handicapped Children, Table 5, Page 10

Group VI- Factors Related to Group I Factors

|  | I Non-Achievers | I Achievers | I Totals | II Non-Achievers | II Achievers | II Totals | III Non-Achievers | III Achievers | III Totals |
|---|---|---|---|---|---|---|---|---|---|
| Chronological Age: |  |  |  |  |  |  |  |  |  |
| CA Above Median for Sample | 44 | 56 | 100 | — | — | — | 48 | 66 | 114 |
| CA Below Median for Sample Totals | 56/100 | 44/100 | 100/200 |  |  |  | 66/114 | 48/114 | 114/228 |
|  | $X^2$=1.69 (Not Significant) | df=1 | P=.192 |  |  |  | $X^2$= 5.07 | df=1 | P=.05 |
| Age at Time of Special Class Placement: |  |  |  |  |  |  |  |  |  |
| 7-8 | 30 | 17 | 47 | 24 | 11 | 35 | 30 | 19 | 49 |
| 9-10 | 20 | 15 | 35 | 13 | 8 | 21 | 27 | 18 | 45 |
| 11-13 Totals | 7/57 | 16/48 | 23/105 | 4/41 | 3/22 | 7/63 | 8/65 | 20/57 | 28/122 |
|  | $X^2$=7.098 | df=2 | P=.05 | $X^2$=.473 (Not Significant) | df=1 | P=.79 | $X^2$= 8.93 | df=2 | P=.05 |
| Reason for Non-Placement: |  |  |  |  |  |  |  |  |  |
| Placement not Considered Urgent by School | 5 | 15 | 20 | 3 | 3 | 6 | 6 | 17 | 23 |
| Not Placed Because of Difficulty of Transportation or Lack of Space Totals | 27/32 | 22/37 | 49/69 | 20/23 | 7/10 | 27/33 | 29/35 | 25/42 | 54/77 |
|  | $X^2$=4.035 | df=1 | P=.05 | $X^2$=.448 (Not Significant) | df=1 | P=.83 | $X^2$=3.91 | df=1 | P=.05 |
| Length of Residence in Chicago: |  |  |  |  |  |  |  |  |  |
| 9 Semesters or More | 73 | 47 | 120 | 49 | 27 | 76 | 78 | 54 | 132 |
| 8 Semesters or Less Totals | 25/98 | 51/98 | 76/196 | 22/71 | 10/37 | 32/108 | 34/112 | 58/112 | 92/224 |
|  | $X^2$=13.432 | df=1 | P=.001 | $X^2$=.423 | df=1 | P=.84 | $X^2$=9.75 | df=1 | P=.01 |

## A Comparison of Achieving and Non-Achieving EMH Children in Terms of two Criteria of Achievement

Our findings of a correlation of .81 between the GICT and Stanford-Binet mental age caused us to reconsider the advisability of having included the GICT in a multiple criterion of achievement. The magnitude of this correlation indicated a very substantial intellective component in the GICT. Using status on this test as one of the criterians for selection of the achieving and non-achieving groups therefore contributed to rendering the two groups different in mental ability. Two supplementary studies of criterion groups on achievement were therefore conducted. In one of these studies the GICT was removed from the selection of the criterion groups, and groups of achieving and non-achieving children were selected on the basis of their performance in reading and arithmetic alone. In another, the criterion groups were selected on the basis of progress in arithmetic and reading over a one-year interval and cases were stratified by CA and IQ validity groupings. Of the two IQ validity strata, one consisted of cases with either or both rural South educational background and the validity of their IQ's questioned in their records, and the second stratification consisted of cases without either of these factors in their records.

As in the previous study, criterion groups in the first of the supplementary studies were selected by first stratifying all cases according to sex. Each sex group was next stratified into one-half year mental age intervals as of date of initial testing, beginning with MA of 6-0. To qualify for the upper criterion group on achievements, subjects were now required to be in the upper 30 per cent on the Stanford Achievement Test for their half-year mental age intervals in both Average Reading and Average Arithmetic. To be in the lower criterion group, subjects were required to be in the lower 30 per cent of their half-year mental age interval in both Average Reading and Average Arithmetic. Factors differentiating the achieving from the non-achieving group are summarized in Table 4, along with a summary of the findings from the analysis of the criterion groups chosen on the basis of three criteria.

When the general comprehension test was eliminated as one of the criteria for selecting the well achieving and poorly achieving groups, the composite picture of the social and psychological characteristics of the two groups remained essentially unchanged. The difference between the means of the achieving group and of the non-achieving group on the GICT was somewhat less when scores on this test were removed in the selection of the criterion group than when they were included in the selection of a multiple criterion group on achievement. The mean scores of the achieving and the non-achieving groups on the GICT still differed by approximately two years, however, even when this test was not used in selecting the criterion groups. Thus, even though the criterion groups were equated on the basis of tested mental age, there is strong support for the hypothesis that achieving and non-achieving mentally handicapped children of the same tested mental age differ as a group in true mental age. As a group, the achievers continued to be characterized by having the validity of their IQ's questioned, by containing a disproportionate number with rural South educational backgrounds, and by receiving high scores on the Ethical Comprehension Test for their tested level of mental ability. Relatively little contact with social agencies, particularly public assistance agencies, good school attendance, relatively high adjustment ratings, relatively high scores on the Well-Adjusted, Responsibility, and Motivation Scales, and low scores on the Passive Scale of the Behavior Checklist continued to distinguish this group from the non-achievers. As a group, the achievers tended to receive higher ratings from examiners on family interest in school achievement.

## A Second Supplementary Study

Since it seemed necessary to qualify our findings of differences between achieving and non-achieving educable mentally handicapped children in view of the questionable validity of the mental age data of some children, an additional study was carried out in which an attempt was made to control for the factor of possible invalidity of IQ.

Two groups of children, a rapid progress group and a slow progress group, were selected on the basis of their progress in achievement between the time of their first testing by the Cooperative Research Project and their retesting one year later. The 562 cases tested during the first year of the project and retested one year later were stratified by sex, by IQ , and by rural South educational background and/or validity of IQ questioned. Thus, in selecting the two criterion groups on progress, children were compared with others of the same sex, IQ, and relative validity of IQ.

Differences between initial scores and retest scores in reading and arithmetic were used as criteria of progress. For a child to qualify for the upper group on progress, he was required to be above the median for his sex, IQ, and IQ validity group with respect to improvement both in average reading and average arithmetic over a one-year interval. To qualify for the slow progress group, a child was required to be below the median with respect to improvement in both average reading and average arithmetic for his sex, IQ, and IQ validity group. Only children whose MA's were 6-0 or above at the time of first testing were included in these comparisons. Improvement in General Information and General Comprehension Test scores was not used as one of the criteria of progress because of the high correlation of this test with mental age.

Table 6 presents a description of the two criterion groups on progress. The rapid progress group made an average of .9 year to one year gain in reading and arithmetic, while the average gain of the slow progress group was less than .2 year. The two groups were virtually identical in tested IQ, but the better progress group was slightly younger than the slow progress group, and lower in tested MA. Just as in the previous comparisons the better achievers did more with a lower IQ, here the better gainers achieved more in spite of seemingly lower MA's.

With the exception of the factors of rural South educational history and IQ questioned, comparisons were made of the same educational, social, and psychological background factors as were made of the achieving and non-achieving groups. Positive findings are reported in Table 7. The younger children and the children with mental ages below eight tended to make better progress than older children and children with the higher MA's. A greater proportion of the slow progress group was enrolled in relatively high transiency schools. Of the family and social factors, only person-per-room ratio differentiated the better gainers from the slow progress group. This relationship, however, was the reverse of what might have been expected. The better gainers came from the more crowded homes. Neither the family stability syndrome nor the family socio-economic scale differentiated between the children who made the most gains and those who made the least progress during a one-year interval.

The lower group on progress had been rated by their teachers as better in their over-all classroom work at the time of first testing. They were, as a matter of fact, slightly higher initially in reading, arithmetic, and GICT scores than the group that was to make the better progress. Of the personality factors, motivation and passivity, as measured by the Behavior Checklist scales, again discriminated between the two groups. Those who were to make the better gains were, as a group, recognized by their teachers as the better motivated and the less passive. Scores on the responsibility and aggressiveness scales

## Table 6

### Description of Criterion Groups on Progress in Achievement Over a One-Year Period

| | | Upper Criterion Group (Best Progress Group) | | Lower Criterion Group (Least Progress Group) | |
|---|---|---|---|---|---|
| Sex | Boys | 70 | | 62 | |
| | Girls | 50 | | 55 | |
| CA | Mean, Boys | 11.089 | | 11.573 | |
| | SD, Boys | 1.605 | | 1.607 | |
| | Mean, Girls | 11.440 | | 11.992 | |
| | SD, Girls | 1.659 | | 1.452 | |
| MA | Mean, Boys | 7.620 | | 7.985 | |
| | SD, Boys | 1.040 | | 1.160 | |
| | Mean, Girls | 7.618 | | 7.974 | |
| | SD, Girls | 1.169 | | .989 | |
| IQ | Mean, Boys | 69.014 | | 68.952 | |
| | SD, Boys | 4.582 | | 4.689 | |
| | Mean, Girls | 67.340 | | 67.118 | |
| | SD, Girls | 5.308 | | 4.985 | |
| | | Initial Score | Amount of Progress | Initial Score | Amount of Progress |
| Stanford Average Reading | Mean, Boys | 1.896 | .956 | 2.085 | .166 |
| | SD, Boys | .903 | .295 | .831 | .228 |
| | Mean, Girls | 2.206 | .968 | 2.654 | .149 |
| | SD, Girls | 1.015 | .331 | .942 | .271 |
| Stanford Average Arithmetic | Mean, Boys | 2.244 | 1.020 | 2.263 | .174 |
| | SD, Boys | .909 | .450 | .890 | .216 |
| | Mean, Girls | 2.326 | .930 | 2.694 | .120 |
| | SD, Girls | .935 | .295 | 1.098 | .264 |
| Chicago Test of General Information and General Comprehension | Mean, Boys | 37.855 | 9.941 | 39.855 | 7.306 |
| | SD, Boys | 15.251 | 6.952 | 15.060 | 6.540 |
| | Mean, Girls | 35.900 | 8.780 | 38.455 | 6.173 |
| | SD, Girls | 15.814 | 6.682 | 14.841 | 6.003 |

Data based on 562 cases tested by Cooperative Research Project during the 1957-58 school year and retested at a one-year interval.

Table 7

**Factors Associated with Rapid and Slow Academic Progress of EMH Children during a one year Interval**

| | Poor Progress Group | Good Progress Group | Totals | $X^2$ | df | P |
|---|---|---|---|---|---|---|
| **Person per room ratio:** | | | | | | |
| 2.0 and below | 103 | 94 | 197 | | | |
| 2.01 and above | 13 | 26 | 39 | | | |
| | 116 | 120 | 236 | 3.95 | 1 | .05 |
| **School Transiency:** | | | | | | |
| Enrolled in 100 highest transiency schools | 87 | 79 | 166 | | | |
| Not enrolled in 100 highest transiency schools | 15 | 32 | 47 | | | |
| | 102 | 111 | 213 | 5.371 | 1 | .05 |
| **Teacher ratings on Overall Classroom Work** | | | | | | |
| Above Median Ratings | 78 | 56 | 134 | | | |
| Below Median Ratings | 36 | 54 | 90 | | | |
| | 114 | 110 | 224 | 6.43 | 1 | .05 |
| **Behavior Checklist Scales (Teacher report)** | | | | | | |
| **Passive Scale:** | | | | | | |
| Above Median Scores | 68 | 44 | 112 | | | |
| Below Median Scores | 46 | 70 | 116 | | | |
| | 114 | 114 | 228 | 9.28 | 1 | .01 |
| **Motivation Scale** | | | | | | |
| Above Median Scores | 45 | 67 | 112 | | | |
| Below Median Scores | 69 | 47 | 116 | | | |
| | 114 | 114 | 228 | 7.739 | 1 | .01 |
| **Chronological Age:** | | | | | | |
| 8-9 | 17 | 29 | 46 | | | |
| 10-11 | 37 | 47 | 84 | | | |
| 12 or Above | 56 | 38 | 94 | | | |
| | 110 | 114 | 224 | 6.926 | 2 | .05 |
| **School History of Having Been Previously Excused from School:** | | | | | | |
| Previously Excused from School | 11 | 4 | 15 | Fisher's Exact Test | | .048 |
| Not Previously Excused from Attending School | 106 | 116 | 222 | | | |
| | 117 | 120 | 237 | | | |

of the Behavior Checklist, however, seemingly did not help to predict which children would make the most gains in reading and arithmetic during the ensuing year.

### Factors Associated with Underestimation of IQ

Of the factors which were found to discriminate between the achieving and non-achieving groups, which factors are directly related to achievement per se and which discriminated between the achievement groups not because of their relationship to achievement but because of their association with factors accounting for underestimation of IQ? Since educational experience in the rural South and questioned validities of IQ's seemed to be associated with underestimation of IQ, cases with these factors in their records were removed from the achieving and non-achieving groups. Comparisons of the remaining achievers and non-achievers on social, educational and psychological factors were made.

Since the sizes of criterion groups were reduced by taking out the rural South and IQ questioned cases, some significant relationships between achievement and background factors may have failed to appear only because of the reduction in number of cases on which significance tests were based. Nevertheless, factors which were significant when rural South and IQ validity questioned cases were included in the sample and were found not to be significant when they were removed were studied in relationship to the factors of educational experience in the rural South and IQ validity questioned. Similar analyses were made between these factors and disparity between GICT score and MA. To identify cases with a disparity between GICT scores and mental age on the Binet, two groups on the General Information and Comprehension Test were selected. Within each one-year chronological age grouping, standard scores on the GICT were determined for two IQ levels, 70-74 and 65-69. Cases whose standard scores for their age and IQ grouping on the GICT were 57 or higher were designated the high group on the GICT, while cases whose standard scores for their age and IQ levels were 43 or below were placed in a low group.

In Table 5 the findings on factors related to the achievement of educable mentally handicapped children based on our studies of criterion groups are summarized and compared. Findings of probabilities of .05 or less were accepted as statistically significant. The data in Table 8 indicate that the factors of rural South educational background, questioned validity of IQ's, and disparity between GICT scores and Stanford-Binet mental age are closely related to one another. Chronological age was related both to rural South educational background and questioned validity of IQ.

A greater proportion of the children in our sample with rural South backgrounds than without rural South backgrounds were below 12 years of age. Most of the rural South children had attended school in Chicago from four to eight semesters, while relatively few Rural South cases had attended school in Chicago more than four years. It becomes apparent, therefore, that the disproportionate number of rural South children with eight or fewer semesters of attendance in Chicago accounted for the relationship between length of residence in Chicago and achievement. Since approximately two thirds of the rural South children in our sample who had been placed in special classes were placed at age nine or later, these children also helped to account for the relatively better showing of the children who were placed in special classes at a later age.

The rural South children lived predominantly in the lowest socio-economic areas of the city. Their removal from the achieving groups increased the significance of the relationship between community socio-economic status and achievement in spite of the reduction in the number of cases in the sample.

Relatively few rural South children compared to others had contact with social agencies, and a smaller proportion of the rural South children than of non-rural South children residing in low socio-economic areas lived in public housing facilities. Our data indicated that the rural South cases tended to be lower on

Table 8 - Interrelationships Among Factors with Implications for Underestimation of Mental Age

| | Rural South Educational Background | | | Validity IQ Questioned | | | Disparity Between GICT Scores and MA | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | GICT Standard Scores | | |
| | Without Schooling in Rural South or Foreign Language Background | With Rural South Ed. Background | Total | Validity of IQ not Questioned | IQ Questioned | Total | 44 and Below | 56 and Above | Total |
| **Rural South Educational Background:** | | | | | | | | | |
| With Rural South Educational Background | —— | —— | | 97 | 48 | 145 | 18 | 41 | 59 |
| Without School Experience in Rural South or Foreign Language Spoken in Home | | | | 338/435 | 86/134 | 424/569 | 101/119 | 89/130 | 190/249 |
| | | | | $X^2$=9.16 | df=1 | P=.01 | $X^2$=8.37 | df=1 | P=.01 |
| **Validity of IQ Questioned:** | | | | | | | | | |
| Validity of IQ Questioned | | | | —— | —— | | 24 | 42 | 66 |
| Validity of IQ Not Questioned | | | | | | | 111/135 | 97/139 | 208/274 |
| | | | | | | | $X^2$=5.134 | df=1 | P=.05 |
| **Chronological Age:** | | | | | | | | | |
| 12 and Above | 150 | 77 | 227 | 180 | 69 | 249 | | | |
| Below 12 | 272/422 | 72/149 | 344/571 | 297/477 | 74/143 | 371/620 | (Not Significant) | | |
| | $X^2$=11.302 | df=1 | P=.001 | $X^2$=4.63 | df=1 | P=.05 | | | |
| **Age at Time of Special Class Placement:** | | | | | | | | | |
| 9 and Above | 123 | 59 | 182 | | | | | | |
| Below 9 | 120/243 | 21/80 | 141/323 | (Not Significant) | | | (Not Significant) | | |
| | $X^2$= 12.17 | df=1 | P=.001 | | | | | | |

Interrelationships Among Factors with Implications for Underestimation of Mental Age (Table 8--p 2)

| | Rural South Educational Background | | | Validity of IQ Questioned | | | Disparity Between GICT Scores and MA | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | GICT Standard Scores | | |
| | Without Schooling in Rural South or Foreign Language Background | With Rural South Ed. Background | Total | Validity of IQ not Questioned | IQ Questioned | Total | 44 and Below | 56 and Above | Total |
| Length of Residence in Chicago: | | | | | | | | | |
| 9 or More Semesters | 271 | 30 | 301 | | | | 7 | 6 | 13 |
| Less than 9 Semesters | 150/421 | 117/147 | 267/568 | | | | 10/17 | 37/43 | 47/60 |
| | $X^2$=82.79 | df=1 | P=.00001 | | (Not Significant) | | $X^2$= 3.836 | df=1 | P=.0502 |
| 4 or More Semesters | 411 | 124 | 535 | | | | | | |
| Less than 4 Semesters | 10/421 | 23/147 | 33/568 | | | | | | |
| | $X^2$=32.683 | df=1 | P=.00001 | | (Not Significant) | | | (Not Significant) | |
| Reason for Non-placement: | | | | | | | | | |
| Placement not Considered Urgent | | | | 25 | 19 | 44 | | | |
| Not Placed Because of Difficulty of Transportation or Lack of Space | (Not Significant) | | | 129/154 | 35/54 | 164/208 | | (Not Significant) | |
| | | | | $X^2$=7.51 | df=1 | P=.01 | | | |
| Community Socio-Economic Status Index: (Boys only) | | | | | | | | | |
| Community Socio-Economic Index III or More | 76 | 14 | 90 | | | | | | |
| Community Socio-Economic Index I or II | 164/240 | 69/83 | 233/323 | | | | | | |
| | $X^2$=6.004 | df=1 | P=.05 | | (Not Significant | | | (Not Significant) | |

## Interrelationships Among Factors with Implications for Underestimation of Mental Age (Table 8-p 3)

| | Rural South Educational Background | | | Validity of IQ Questioned | | | Disparity Between GICT Scores and MA | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | GICT Standard Scores | | |
| | Without Schooling in Rural South or Foreign Language Background | With Rural South Ed. Background | Total | Validity of IQ not Questioned | IQ Questioned | Total | 44 and Below | 56 and Above | Total |
| **Contact with Social Agencies:** | | | | | | | | | |
| **Contact with Social Agencies** | 262 | 55 | 317 | | | | | | |
| **No Contact with Social Agencies** | 224/486 | 104/159 | 328/645 | | | | | | |
| | $X^2$=17.125 | df=1 | P=.0001 | (Not Significant) | | | (Not Significant) | | |
| **Residence in Public Housing Facilities:** | | | | | | | | | |
| **Residence in Public Housing** | 42 | 5 | 47 | | | | | | |
| **Not Living in Public Housing** | 237/279 | 124/129 | 361/408 | (Not Significant) | | | (Not Significant) | | |
| | $X^2$=9.745 | df=1 | P=.01 | | | | | | |
| **Family Socio-Economic Scale:** | | | | | | | | | |
| | | | | | | Total | | | |
| **Intact Family: Father Skilled or Higher** | 54 | 7 | 61 | 51 | 10 | 61 | | | |
| **Intact Family: Father Semi-Skilled** | 62 | 14 | 76 | 59 | 23 | 82 | | | |
| **Intact Family: Father Unskilled** | 99 | 49 | 148 | 127 | 39 | 166 | | | |
| **Intact Family: Both Parents Unskilled** | 27 | 10 | 37 | 38 | 7 | 45 | | | |
| **Supported by Mother Only: ADC or Unskilled** | 124/366 | 41/121 | 165/487 | 140/415 | 21/100 | 161/515 | | | |
| | $X^2$=13.025 | df=4 | P=.05 | $X^2$ =10.63 | df=4 | P=.05 | (Not Significant) | | |

Interrelationships Among Factors with Implications for Underestimation of Mental Age (Table 8--p.4)

| | Rural South Educational Background | | | Validity of IQ Questioned | | | Disparity Between GICT Scores and MA | | |
|---|---|---|---|---|---|---|---|---|---|
| | Without Schooling in Rural South or Foreign Language Background | With Rural South Ed. Background | Total | Validity of IQ not Questioned | IQ Questioned | Total | GICT Standard Scores 44 and Below | 56 and Above | Total |
| Examiner's Rating of Family Educational Aspiration Level: | | | | | | | | | |
| Above Median Rating | 167 | 65 | 232 | | | | | | |
| Below Median Rating | 188<br>355 | 43<br>108 | 231<br>463 | (Not Significant) | | | (Not Significant) | | |
| | X²= 5.21 | df=1 | P= .05 | | | | | | |
| Adjustment Rating Scale Scores (Teacher Ratings): | | | | | | | | | |
| Above Median | | | | 221 | 81 | 302 | 55 | 81 | 136 |
| Below Median | (Not Significant) | | | 244<br>465 | 58<br>139 | 302<br>604 | 78<br>133 | 57<br>138 | 135<br>271 |
| | | | | $X^2$=4.52 | df=1 | P=.05 | $X^2$=7.47 | df=1 | P=.01 |
| Teacher Rating on Over-All Classroom Work: | | | | | | | | | |
| Ratings of 3 or Above | | | | | | | 66 | 93 | 159 |
| Ratings of 2 or Below | (Not Significant) | | | (Not Significant) | | | 67<br>133 | 45<br>138 | 112<br>271 |
| | | | | | | | $X^2$=8.10 | df= 1 | P=.01 |
| Behavior Checklist Scales: (Teacher Report) | | | | | | | | | |
| Well Adjusted Scale: | | | | | | | | | |
| Above Median Scores | | | | 219 | 77 | 296 | | | |
| Below Median Scores | (Not Significant) | | | 238<br>457 | 58<br>135 | 296<br>592 | (Not Significant) | | |
| | | | | $X^2$=3.109<br>$X^2$=4.674 | df=1<br>df=1 | P=.078<br>P=.05* | | | |
| Passive Scale: | | | | | | | | | |
| Above Median Scores | 210 | 62 | 272 | | | | | | |
| Below Median Scores | 192<br>402 | 80<br>142 | 272<br>544 | (Not Significant) | | | (Not Significant) | | |
| | $X^2$=3.66<br>$X^2$=4.11 | df=1<br>df=1 | P=.056<br>P=.05* | | | | | | |

* Without Yates' Correction

| | Rural South Educational Background | | | Validity of IQ Questioned | | | Disparity Between GICT Scores and MA | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | GICT Standard Scores | | |
| | Without Schooling in Rural South or Foreign Language Background | With Rural South Ed. Background | Total | Validity of IQ not Questioned | IQ Questioned | Total | 44 and Below | 56 and Above | Total |
| Aggressive Scale: | | | | | | | | | |
| Above Median Scores | 211 | 61 | 272 | | | | | | |
| Below Median Scores | 191<br>402 | 81<br>142 | 272<br>544 | (Not Significant) | | | (Not Significant) | | |
| | $X^2=4.57$ df=1 | P=.05 | | | | | | | |
| Motivation Scale; | | | | | | | | | |
| Above Median Scores | 190 | 81 | 271 | | | | | | |
| Below Median Scores | 212<br>402 | 60<br>141 | 272<br>543 | (Not Significant) | | | (Not Significant) | | |
| | $X=3.93$ df=1 | P=.05 | | | | | | | |
| Responsibility Scale: | | | | | | | | | |
| Above Median Scores | 191 | 81 | 272 | | | | | | |
| Below Median Scores | 211<br>402 | 60<br>141 | 271<br>543 | (Not Significant) | | | (Not Significant) | | |
| | $X^2=3.73$<br>$X^2=4.121$ | df=1<br>df=1 | P=.053<br>P=.05* | | | | | | |
| Central Personality Pattern: | | | | | | | | | |
| Well-Adjusted | | | | | | | 23 | 36 | 59 |
| Moderately Well-Adjusted, Hyperactive and Mildly Aggressive | | | | | | | 71 | 60 | 131 |
| Passive | | | | | | | 13 | 2 | 15 |
| Passive-Aggressive | | | | | | | 12 | 9 | 21 |
| Active-Aggressive | (Not Significant) | | | (Not Significant) | | | 12<br>131 | 24<br>131 | 36<br>262 |
| | | | | | | | $X^2=18.283$ | df=4 | P=.01 |

*Without Yates' Correction

the family socio-economic scale than the non-rural South cases, while the IQ questioned cases seemed to be slightly higher socio-economically than those whose IQ's were not questioned. The rural South cases tended to score slightly lower on the Passivity Scale of the Behavior Checklist completed by teachers than the non-rural South cases, slightly lower on the Aggressiveness Scale and higher on the Motivation and Responsibility Scales than the non-rural South children.

There was a relationship between having the validity of IQ's questioned and examiners' having recorded the fact that school personnel had not considered a child's placement urgent. The children whose IQ's were questioned also had received, on an average, higher ratings on the Adjustment Rating Scale than children whose IQ's were not questioned.

The rural South children and the children whose IQ's were questioned tended to receive high scores on the GICT for their age and IQ. The children earning relatively high GICT scores for their mental ages also, as a group, received higher ratings on the Adjustment Rating Scale and higher ratings on Over-all Classroom Work than the children who received low GICT scores. On the Behavior Checklist, more children receiving high scores on the GICT were characterized by their teachers as Well-Adjusted or as Active Aggressive than the children receiving low GICT scores, and fewer of the high scoring children on the GICT were categorized as Passive.

### The Problem of Psuedo Retardation

One of the basic problems in testing educable mentally handicapped children is the problem of differentiating between children who are truly retarded and those who perform on psychological tests as if they were retarded, but who actually possess more ability than their test performance indicates. Their poor performance on mental tests may be influenced by impoverished experiential backgrounds, by deep seated emotional problems, or by poor motivation. Psychologists always strive to elicit the best performance from a child of which he is capable. When, in their judgment, a child's test score is below the level of the ability of which he is capable, they often record this clinical impression by questioning the validity of the IQ obtained. This chapter has presented data which, we believe, constitute an important contribution to the diagnosis of mental handicap. Evidence has been presented here that a number of factors studied in relation to our criterion achievement groups are indicative of underestimation of mental age by the Stanford - Binet. These factors are rural South educational background, validity of IQ questioned, high scores in reading and arithmetic relative to mental age, and high scores on the Chicago Test of General Information and General Comprehension and on the Ethical Comprehension Test relative to tested mental age. Table 12 presents a matrix of interrelationships among those factors brought out in the present study which support the hypothesis that they constitute a syndrome related to underestimation of mental age.

## Summary

This chapter reported on a number of studies comparing the best achievers and the poorest achievers of the entire group of educable mentally handicapped children tested in the Chicago Cooperative Research Project matched-pair experiment. In the first study, one-hundred educable mentally handicapped children achieving consistently well in reading, arithmetic and general information and general comprehension for their mental age level were compared with one-hundred non-achieving educable mentally handicapped children of comparable mental age. The two groups were identical in tested mental age, but the mean achievements in reading and arithmetic of one group were third grade level, while those of the other group were at first grade level. On the Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children, the two groups were approximately two years apart. Educational, psychological, physical, family and social factors in the backgrounds of the two groups were compared. One of the most striking differences between the achieving and non-achieving educable mentally

## Table 9

### Matrix of Interrelationships Among Factors in Syndrome Hypothetically Related to Underestimate of Mental Age

| Factors | a | b | c | d | e |
|---|---|---|---|---|---|
| a. Rural South Educational Background | | | | | |
| b. Validity of IQ Questioned | $X^2 = 9.165$<br>df = 1<br>P = .01 | | | | |
| c. GICT | $X^2 = 8.371$<br>df = 1<br>P = .01 | $X^2 = 5.134$<br>df = 1<br>P = .05 | | | |
| d. ECT | | | r = .59 | | |
| e. Reading Achievement | | | r = .75 | | |
| f. Multiple Achievement Criterion Reading and Arithmetic | $X^2 = 14.715$<br>df = 1<br>P = .001 | $X^2 = 16.871$<br>df = 1<br>P = .0001 | | $X^2 = 12.592$<br>df = 1<br>P=.0001 | |
| g. Arithmetic Achievement | | | | | r = .73<br>(N = 223)<br>(Pilot Study Av. Read. & Arith. Comparison) |
| h. Stanford-Binet Mental Age | | | N = 556<br>.81 | N= 554<br>.56 | N = 558<br>.65 |

handicapped children was a strong indication that the mental age and therefore the IQ's of the achieving groups had been underestimated by their last psychological examinations. More of the achieving group had a school history showing educational experience in the rural South, and in a significantly greater proportion of cases of the achieving group, the validity of the IQ was questioned either by the Bureau of Child Study psychologists or by Cooperative Research Project examiners. Family instability, socio-economic status, cultural deprivation and personality integration appeared to be the major factors differentiating the achieving and the non-achieving groups.

Singly, factors such as broken homes, inadequate housing, crowded living conditions, unskilled parental occupations, and limited parental educational backgrounds occurred about as frequently in the backgrounds of the achieving as of the non-achieving groups. A family stability syndrome of four factors combined did differentiate between the two groups, however, with more family instability in the non-achieving group. Further, although both groups were of low socio-economic status, a greater proportion of the non-achieving group was supported by mothers on Aid to Dependent Children and by mothers employed in unskilled work, while more of the achieving group came from intact families with semi-skilled fathers as their source of support. Our data on medically diagnosed psychiatric, speech, and neurological defects were meager, but diagnosed cases with these defects occurred more frequently in the non-achieving group than the achieving group.

The achievers were rated as better adjusted by their teachers, better in their over-all classroom work, more aggressive, better motivated, more responsible, and less passive. The non-achievers received more high scores on abnormality and ineffective thinking scales derived from projective personality test protocols. The family educational aspiration level of the non-achieving group appeared lower than that of the achieving group; more parents of the non-achieving group appeared to have too little interest in their child's achievement.

When the Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children was eliminated as one of the criteria for selecting the relatively well achieving and poorly achieving groups, the composite picture of the social and psychological characteristics of the two groups remained essentially unchanged. The difference between the means of the achieving group and of the non-achieving group on the GICT was somewhat less than when scores on this test played a part in the selection in the criterion groups, but the mean scores of the achieving and the non-achieving groups on the GICT continued to differ by approximately two years. In view of a correlation of .81 found between the GICT and mental age on the Stanford-Binet, a correlation comparable to that between the Stanford-Binet and the Wechsler Intelligence Scale for Children, there is evidence that performance on the GICT is highly related to intelligence. Thus, there was strong support for the hypothesis that achieving and non-achieving educable mentally handicapped children of the same tested mental age differ as a group in true mental age.

In a third study, two groups of EMH children were selected on the basis of their progress between first testing by the Cooperative Research Project and re-testing one year later. Those who made above median gains in both reading and arithmetic for their IQ's were compared on the same background factors as in the first study with those who made below median gains in both reading and arithmetic for their IQ's. IQ, sex, rural South backgrounds, and/or questioned IQ's were controlled in the selection of the better progress group and the slow progress group. Comparisons of the same educational, social, physical, and psychological background factors were made of the two progress groups. Motivation and passivity scores again discriminated between the two groups. Those who were to make better gains were, as a group, recognized by their teachers as the better motivated and the less passive.

Our sample of educable mentally handicapped children was predominantly a sample from the lower socio-economic strata of the city. Nevertheless, even within a supposedly homogeneous socio-economic group, and even within low IQ groups, differences in potentialities, achievement, and personality stood out. Our data also showed clearly that the mental age grade expectancy formula used by itself gives an inadequate estimate of an educable mentally handicapped child's academic potentiality. Periodic re-evaluation of the mental abilities of children with rural South educational backgrounds and with questioned IQ's seems strongly indicated in order to insure that facilities for educable mentally handicapped children are used for those who are most in need of them. Findings also indicate that it is important to take factors other than mental age into consideration in appraising the learning potentiality of an educable mentally handicapped child. Appraisal of such characteristics as motivation, responsibility and passivity would appear to be among the most pertinent aspects of personality affecting the achievement of the educable mentally handicapped child.

## Chapter 4

## Correlates of Adjustment

The question of which objectives of the curriculum are most important for educable mentally handicapped children has been the subject of much controversy, but of little research. Important as the academic objectives of the curriculum are, there is evidence from previous research that failure of mentally handicapped persons in adult life may more often be attributable to difficulties in interpersonal relationships than to lack of academic skills. The Detroit Study (Lee, Hegge, [illegible], and Voelker, 1959) demonstrated a relationship between previous school adjustment and post-school law record. Our studies of correlates of achievement, reported in Chapter 3, showed that personality and motivational factors are related to the non-achieving mentally handicapped child's failure to make academic progress. The effect of emotionally disturbed and socially maladjusted educable mentally handicapped children upon the academic progress of their classmates is one that has not been sufficiently studied. A consideration of the correlates of school adjustment of mentally handicapped children may therefore have relevance to achievement, to the over-all success of instructional programs for these children, and to prognosis for post-school adjustment, as well as for identification of possible sources of bias in evaluation research.

### Procedure

Two groups of educable mentally handicapped children differing conspicuously in their school adjustment were selected. Educable mentally handicapped children who were considered well adjusted both by teachers and by examiners at the time of the first test and at the time of the retest, one year later, were compared with a group of educable mentally handicapped children who were considered not well adjusted either at the time of test or at the time of the retest, or who, according to agreement of teacher and examiner, had worsened in their adjustment from [illegible]

[illegible]

by the [illegible]

from test to retest. Pupils were selected for the Well-Adjusted and Poorly Adjusted groups without regard to placement; both groups contained children from both special classes and regular classes. For inclusion in the Well Adjusted group, a child was required to meet the following conditions: (1) On the Behavior Checklist, which was made out by the teacher, the child was to be categorized as either Well-Adjusted or Moderately Well-Adjusted on both test and retest. (2) On the Examiner's Observation Checklist, he was to be classified as Well-Adjusted on both test and retest. (3) On the Examiner's Motivation Rating Scale, he was to be coded as "3" or "5", indicating that his attention and effort had been well sustained during tests and interview without undue tension.

For inclusion in the Poorly Adjusted group, the following conditions were required: (1) A child was to be categorized as other than Well-Adjusted or Moderately Well-Adjusted on the Teacher's Behavior Checklist, both at time of test and at retest. (2) He was to have been categorized other than Well-Adjusted by the Examiner on the Observation Checklist, both at time of test and of retest. (3) If he did not meet both of the above criteria, he could qualify for inclusion in the Poorly Adjusted group if teacher report instruments and Examiner Observation Checklist data agreed that he had regressed in adjustment from first test to retest. The following data were accepted as evidence of regression in adjustment: (a) A change from either the Well-Adjusted or the Moderately Well-Adjusted categories of the Behavior Checklist to the Passive, Passive-Aggressive, Active-Aggressive, or Hyperactive categories; or (b) A regression in categorization on the Observation Checklist, and a drop of three or more points on the teacher Adjustment Rating Scale without improvement or regression in the Behavior Checklist categorizations; or (c) A regression in the Behavior Checklist categorization, accompanied by either the below average or the overly tense ratings on the Examiner's

Motivation Rating Scale without either improvement or regression on the Observation Checklist categorization.

The two groups were compared on all of the large number of social, educational and psychological background factors for which data were available. There were no significant differences between the Well Adjusted and the Poorly Adjusted groups on many of these factors. The factors discussed below are the only ones on which the groups differed significantly according to accepted statistical criteria. The two groups were selected without regard to placement; both the Well-Adjusted and Poorly Adjusted groups contained pupils from both special and regular classes. Social, educational, and psychological factors in the backgrounds of the well-adjusted and poorly adjusted educable mentally handicapped boys and girls were studied separately.

Results, Boys:

The following differences were found in the backgrounds of well-adjusted and poorly adjusted boys:

Place of Birth

The proportion of boys with rural birthplaces was larger in the well-adjusted than in the poorly adjusted groups. The ratio of urban to rural birthplaces in the well-adjusted group was approximately two to one, while the ratio of urban to rural birthplaces in the poorly-adjusted groups was from four to one to six to one, depending upon whether or not towns or cities of 2500 to 15,000 were included in the urban category.

Social Agency Contact

The well-adjusted group had proportionately less contact with social agencies than the poorly-adjusted group. Contacts with protective agencies were particularly infrequent in the well-adjusted group. Less than 10 per cent of the boys in the well-adjusted group had had contacts with protective social agencies, while almost one-fourth of the boys in the poorly-adjusted group were known to protective social agencies. A greater proportion of the poorly-adjusted boys were supported by mothers on ADC.

Urgency of Placement

A substantial proportion of EMH boys in the well-adjusted group who remained unplaced were considered not urgently in need of placement by their principals or teachers. School personnel, on the other hand, regarded the poorly-adjusted EMH boys in urgent need of placement.

Psychiatric Defects

Psychiatric defects, suspected or diagnosed, though infrequently recorded in the case reports, were predominantly in the poorly-adjusted group.

Speech and Adjustment Ratings

Above average ratings on Speech, average or above average ratings on Over-all Classroom Behavior, Adjustment to Other Children, and Social Participation, and above average ratings on Relationship with Examiners characterized the well-adjusted group. Average ratings on these traits were much less frequent in the poorly-adjusted group. The poorly-adjusted boys were most sharply differentiated from the well-adjusted boys by their low ratings on Social Adjustment.

Ratings of Home Atmosphere

Above average ratings on Home Atmosphere and Pressure for Achievement characterized the well-adjusted EMH boys; below average ratings on these traits

## Table 10

## Social and Psychological Factors

## Related to the Adjustment of EMH Children

All Chi Square tests with Yates' correction unless otherwise indicated

| | | Boys | | | | |
|---|---|---|---|---|---|---|
| Birthplace: | Poorly Adjusted Group | Well Adjusted Group | Totals | $X^2$ | df | Level of Significance |
| USA, City 15,000+ | 28 | 50 | 78 | | | |
| City or Town 2,500 to 15,000 | 8 | 8 | 16 | | | |
| Rural | 6 | 27 | 33 | 5.659 | 2 | .05 |
| | 42 | 85 | 127 | | | |
| Birthplace: | | | | | | |
| USA, City or Town 2,500+ | 36 | 57 | 93 | | | |
| USA, Rural | 6 | 26 | 32 | | | |
| | 42 | 83 | 125 | 3.404 | 1 | .065 |
| | | | | *4.25 | 1 | .05 |
| Birthplace of Mothers: | | | | | | |
| Urban 15,000 or over | 12 | 29 | 41 | | | |
| City or Town 2,500 to 15,000 | 11 | 7 | 18 | | | |
| Rural | 17 | 43 | 60 | | | |
| | 40 | 79 | 119 | 7.196 | 2 | .02 |
| Known to Protective Social Agencies | 9 | 5 | 14 | | | |
| No Social Agency Contact | 24 | 54 | 78 | | | |
| | 33 | 59 | 92 | 4.43 | 1 | .05 |
| Occupation of Mothers: | | | | | | |
| Mother supported by ADC | 11 | 18 | 29 | | | |
| Mother employed full time | 2 | 28 | 30 | | | |
| | 13 | 46 | 59 | 6.67 | 1 | .01 |
| Reason for Non-Placement: | | | | | | |
| Placement not Considered Urgent | 0 | 8 | 8 | | | |
| Not Placed Because of Lack of Transportation or lack of space | 16 | 15 | 31 | Fisher's Exact Test | | |
| | 16 | 23 | 39 | | | .008 |

*Without Yates' Corrections

(Table 10 continued )
Social and Psychological Factors
Related to the Adjustment of EMH Children
Cont. Page 2. Boys

| | Poorly Adjusted Group | Well Adjusted Group | Totals | $X^2$ | df | Level of Significance |
|---|---|---|---|---|---|---|
| Psychiatric Defects Suspected or Diagnosed | 6 | 1 | 7 | | | |
| Psychiatric Defects not Coded as Suspected or Diagnosed | $\frac{38}{44}$ | $\frac{85}{86}$ | $\frac{123}{130}$ | Fisher's Exact Test | | .006 |
| Ratings on Over-all Classroom Work | | | | | | |
| 3,4,5 | 24 | 82 | 106 | | | |
| 0,1,2 | $\frac{17}{41}$ | $\frac{2}{84}$ | $\frac{19}{125}$ | 29.688 | 1 | .00001 |
| Ratings on Over-all Classroom Behavior: | | | | | | |
| 3,4,5 | 24 | 77 | 101 | | | |
| 2 or below | $\frac{17}{41}$ | $\frac{7}{84}$ | $\frac{24}{125}$ | 17.416 | 1 | .0001 |
| Ratings on Adjustment to Other Children: | | | | | | |
| 3 and Above | 12 | 72 | 84 | | | |
| 2 and Below | $\frac{29}{41}$ | $\frac{12}{84}$ | $\frac{41}{125}$ | 37.307 | 1 | .00001 |
| Ratings on Social Participation: | | | | | | |
| 3 and Above | 19 | 74 | 93 | | | |
| 2 and Below | $\frac{22}{41}$ | $\frac{10}{84}$ | $\frac{32}{125}$ | 23.074 | 1 | .00001 |

(Table 10 continued )
Social and Psychological Factors
Related to the Adjustment of EMH Children
Cont. Page 3. Boys

| | Poorly Adjusted Group | Well Adjusted Group | Totals | $X^2$ | df | Level of Significance |
|---|---|---|---|---|---|---|
| Test Behavior and and Relationship with Examiner: | | | | | | |
| Subjects establishing very good relationship with Examiners, as indicated by negative score of 0 | 14 | 52 | 66 | | | |
| Subjects receiving negative score of one or more on Relationship with Examiner | 29<br>43 | 33<br>85 | 62<br>128 | 8.25 | 1 | .01 |
| Speech Ratings: | | | | | | |
| General Fluency: | | | | | | |
| Ratings of Adequate | 7 | 34 | 41 | | | |
| Ratings of Fair or Poor | 37<br>44 | 51<br>85 | 88<br>129 | 6.69 | 1 | .01 |
| Voice: | | | | | | |
| Ratings of Adequate | 22 | 60 | 82 | | | |
| Ratings of Fair or Poor | 21<br>43 | 19<br>79 | 40<br>112 | 6.21 | 1 | .05 |
| Examiner Ratings of Home Background Factors: (Rating not supported by at least a fair degree of evidence excluded) | | | | | | |
| Parental Cooperativeness: | | | | | | |
| Ratings of Average or above | 18 | 57 | 75 | | | |
| Ratings of Less than average | 13<br>31 | 9<br>66 | 22<br>97 | 8.08 | 1 | .01 |
| Home Atmosphere: | | | | | | |
| Ratings of Fair, Good, or Excellent | 10 | 44 | 54 | | | |
| Ratings of "Definite Evidence of Poor Atmosphere" | 14<br>24 | 11<br>55 | 25<br>79 | 9.65 | 1 | .01 |

(Table 10 continued)
Social and Psychological Factors
Related to the Adjustment of EMH
Children, Page 4, Boys.

| Home Pressure for Achievement: | Poorly Adjusted Group | Well Adjusted Group | Total | $X^2$ | df | Level of Significance |
|---|---|---|---|---|---|---|
| Ratings of interest in Childrens' Achievement | 10 | 47 | 57 | | | |
| Ratings of too little interest in Childrens' Achievement | 16 | 11 | 27 | | | |
| | 26 | 58 | 84 | 13.02 | 1 | .001 |

### Table 11
### Social and Psychological Factors Related to the Adjustment of EMH Children

All Chi Square tests with Yates' correction unless otherwise indicated.

Girls

| | Poorly Adjusted Group | Well Adjusted Group | Totals | $X^2$ | df | Level of Significance |
|---|---|---|---|---|---|---|
| Rural South Birthplace | 7 | 19 | 26 | | | |
| No Educational Deprivation Recorded | 35 | 32 | 67 | | | |
| | 42 | 51 | 93 | 3.879 | 1 | .05 |
| Foreign Language Background: | | | | | | |
| Foreign Language Spoken in Home | 0 | 6 | 6 | | | |
| No Educational Deprivation Recorded | 35 | 32 | 67 | Fisher's Exact Test | | .016 |
| | 35 | 38 | 73 | | | |
| Broken Homes: | | | | | | |
| Child Living with Both Parents | 15 | 33 | 48 | | | |
| Child Not Living With Both Parents | 27 | 24 | 51 | | | |
| | 42 | 57 | 99 | 3.916 | 1 | .05 |
| Central Heating System in Home: (Socio-Economic Community Rating 1,2 and 3 only) | | | | | | |
| Homes Without Central Heating Systems | 7 | 2 | 9 | | | |
| Homes With Central Heating Systems | 30 | 48 | 78 | | | |
| | 37 | 50 | 87 | Fisher's Exact Test | | .028 |

(Table 11 continued)

Social and Psychological Factors Related to the Adjustment of EMH Children. Page 2, Girls

| School Transiency Rank: | Poorly Adjusted Group | Well Adjusted Group | Totals | $X^2$ | df | Level of Significance |
|---|---|---|---|---|---|---|
| Girls | | | | | | |
| 1-20 | 13 | 6 | 19 | | | |
| 21-40 | 6 | 19 | 25 | | | |
| 41-60 | 3 | 4 | 7 | | | |
| 61-80 | 3 | 7 | 10 | | | |
| 81-100 | 7 | 4 | 11 | | | |
| 101+ | 10 | 17 | 27 | | | |
| | 42 | 57 | 99 | 11.757 | 5 | .05 |
| Ratings on Over-all Classroom Work: | | | | | | |
| 3,4,5 | 7 | 28 | 35 | | | |
| 0,1,2 | 33 | 29 | 62 | | | |
| | 40 | 57 | 97 | 8.867 | 1 | .01 |
| Ratings on Over-all Classroom Behavior: | | | | | | |
| 3, 4, or 5 | 20 | 45 | 65 | | | |
| 2 and Below | 20 | 12 | 32 | | | |
| | 40 | 57 | 97 | 7.64 | 1 | .01 |
| Ratings on Adjustment to Other Children: | | | | | | |
| 3 and Above | 24 | 51 | 75 | | | |
| 2 and Below | 16 | 6 | 22 | | | |
| | 40 | 57 | 97 | 10.002 | 1 | .001 |
| Ratings on Social Participation: | | | | | | |
| 3 and Above | 16 | 38 | 54 | | | |
| 2 and Below | 24 | 19 | 43 | | | |
| | 40 | 57 | 97 | 5.73 | 1 | .05 |

(Table 11 continued)
Social and Psychological Factors
Related to the Adjustment of EMH
Children. Page 3 Girls

| | Poorly Adjusted Group | Well Adjusted Group | Totals | $X^2$ | df | Level of Significance |
|---|---|---|---|---|---|---|
| **Test Behavior and Relationship:** Subjects establishing very good relationship with Examiners as indicated by Negatives score of 0 | 12 | 40 | 52 | | | |
| Subjects receiving Negative score of one or more | 30 | 17 | 47 | | | |
| | 42 | 57 | 99 | 15.16 | 1 | .0001 |
| **Speech Ratings:** | | | | | | |
| General Fluency: | | | | | | |
| Ratings of Adequate | 11 | 28 | 39 | | | |
| Ratings of Fair or Poor | 31 | 29 | 60 | | | |
| | 42 | 57 | 99 | 4.41 | 1 | .05 |
| Over-all Speech Rating: | | | | | | |
| 4 and 5 (High) | 8 | 23 | 31 | | | |
| 3(Average) | 24 | 28 | 52 | | | |
| 1 and 2 (Low) | 10 | 6 | 16 | | | |
| | 42 | 57 | 99 | 6.44 | 2 | .05 |
| Voice: | | | | | | |
| Ratings of Adequate | 21 | 45 | 66 | | | |
| Ratings of Fair or Poor | 21 | 12 | 33 | | | |
| | 42 | 57 | 99 | 7.86 | 1 | .01 |
| **Examiners' Ratings of Home Background Factors:** (Ratings not supported by at least a fair degree of evidence excluded) | | | | | | |
| Parental Cooperativeness: | | | | | | |
| Ratings of Average or Above | 19 | 34 | 53 | | | |
| Ratings of Less than Average | 14 | 9 | 23 | | | |
| | 33 | 43 | 76 | 3.13<br>* 4.09 | 1<br>1 | .08<br>.05 |
| Home Pressure for Achievement: | | | | | | |
| Ratings of Interest in Childrens' Achievement | 15 | 34 | 49 | | | |
| Ratings of too little Interest in Childrens' Achievement | 19 | 12 | 31 | | | |
| | 34 | 46 | 80 | 6.11 | 1 | .05 |

* Without Yates' Correction

were relatively more often recorded in cases of the poorly-adjusted EMH boys.

## Results: Girls

The following differences were found between the social and psychological characteristics of well-adjusted and poorly-adjusted EMH girls.

### Birthplace, Rural South, and Foreign-Language Backgrounds

Almost forty per cent of the well-adjusted girls had rural South birthplaces, while only one-sixth of the girls in the poorly-adjusted group had rural South birthplaces. Although the total number of girls with foreign language backgrounds was small, these tended to be well-adjusted. None of the girls in the poorly-adjusted group had foreign language backgrounds.

### Broken Homes

Broken homes seemed to affect the adjustment of EMH girls more than EMH boys. Approximately sixty per cent of the well-adjusted girls were from unbroken homes, while approximately sixty-five per cent of the poorly-adjusted girls came from broken homes. This factor did not differentiate between the well-adjusted and poorly-adjusted boys.

### Living Conditions

Although there were few homes without central heating systems, girls from homes without central heating systems tended to be in the poorly-adjusted group.

### School Transiency

Enrollment in one of the twenty highest transiency schools was associated with poor adjustment in girls. Almost one-third of the girls in the poorly-adjusted category were enrolled in the twenty schools with the highest transiency ratings, whereas less than one-ninth of the girls in the well-adjusted group were enrolled in the twenty highest transiency schools.

Adjustment and Speech Ratings

The well-adjusted girls, as a group, received average or above average ratings in Over-all Classroom Work, Over-all Classroom Behavior, Adjustment to Other Children and Social Participation. They also received above median ratings on Relationship with Examiners. Above average Speech ratings were relatively more frequent in the well-adjusted group. Few of the poorly adjusted girls received above average over-all ratings in Speech.

Ratings of Home Factors

The well-adjusted girls tended to receive above average ratings on Home Pressure for Achievement, while more of the poorly adjusted girls received below average ratings on Home Pressure for Achievement.

Achievement, Mental Age, and Adjustment of EMH Boys and Girls.

Adjustment of EMH boys and girls is positively related to achievement in reading and arithmetic, to GICT and Ethical Comprehension Test Scores, to chronological age and to mental age. These findings are based on Mann-Whitney U Tests reported in Table 12. These findings indicate that the better adjusted children also tend to be the ones with the higher levels of achievement. Whether these results were accounted for by achievement per se, or by mental age or chronological age is not clear from our data.

Projective Test Scores and School Adjustment

In the study of personality scales from the Thematic Apperception Test and Michigan Picture test protocols, boys' and girls' adjustment groups were combined. Low scores on the Ineffective Thinking scale were associated with the Well-Adjusted groups, while high scores on this scale appeared about as frequently in the Well-Adjusted as in the Poorly-Adjusted groups.

Summary

This chapter reported on a study of social, educational, and psychological factors in the backgrounds of well-adjusted and poorly-adjusted EMH boys and girls.

## Table 12

Relationships between Achievement, Mental Age, Chronological Age and Adjustment, as based upon Mann-Whitney U Tests of Differences between Criterion Adjustment Groups

| | Boys | | | Girls | | |
|---|---|---|---|---|---|---|
| Factor | Z | P | Criterion Group with higher median | Z | P | Criterion Group with higher median |
| Mental Age | 1.169 | .10 | -- | 3.19 | .01 | Upper |
| Chronological Age | 2.33 | .05* | Upper | -- | -- | -- |
| Stanford Para. Mean. | 1.91 | .10 | -- | 2.418 | .05* | Upper |
| Stanford Word Mean. | 1.81 | .10 | -- | 1.74 | .10 | -- |
| Stanford Av. Read. | 2.11 | .05* | Upper | 2.15 | .05* | Upper |
| Stanford Arith. Comp. | 2.67 | .01* | Upper | 2.87 | .01 | Upper |
| Stanford Arith. Reas. | 2.55 | .05* | Upper | 2.15 | .05* | Upper |
| Stanford Av. Arith. | 2.82 | .01* | Upper | 2.84 | .01* | Upper |
| Metropolitan Read. Readiness (Score of 1.0 on Stanford Read. Only) | 2.196 | .01* | Upper | 1.16 | .10 | -- |
| GICT Total Score, including ECT | 2.49 | .05* | Upper | 2.11 | .05* | Upper |
| GICT Score not including ECT | 1.98 | .05* | Upper | -- | -- | -- |
| GICT, Health, P.E. & Safety | 2.17 | .05* | Upper | 2.798 | .01* | Upper |
| GICT, Science | 2.08 | .05* | Upper | -- | -- | -- |
| GICT, ECT Unit Score | 3.44 | .01* | Upper | 2.33 | .05* | Upper |
| GICT, ECT Total Score | 3.57 | .01* | Upper | 1.08 | -- | -- |
| GICT, Arithmetic | 2.08 | .05* | Upper | 1.49 | -- | -- |
| GICT, Social Studies | 5.44 | .01* | Upper | 6.53 | .01* | Upper |

* Indicates statistical significance at .05 level of higher

A greater proportion of the well-adjusted boys had rural birthplaces. The well-adjusted boys received higher adjustment ratings and higher ratings on speech. They were less often considered urgently in need of special placement. Their homes were given higher ratings on home atmosphere by staff examiners, and higher ratings on interest in school achievement. More mothers of the well-adjusted children were employed. The poorly adjusted EMH boys were predominantly city-born. They had had proportionately more contacts with social agencies and particularly with protective agencies than the well-adjusted group. A greater proportion were supported by Aid to Dependent Children. There were more psychiatric defects, suspected or diagnosed, in the poorly-adjusted group. The poorly adjusted boys received lower speech ratings and adjustment ratings than the well-adjusted boys, and their homes were given lower ratings on home atmosphere and in interest in school achievement.

The well-adjusted girls were differentiated as a group from the poorly-adjusted girls in higher incidence of rural South birthplaces, foreign language backgrounds, and intact homes. Few of the EMH girls with rural South or foreign language backgrounds were considered poorly adjusted. The well-adjusted girls received higher speech ratings from examiners and higher adjustment ratings from teachers. Their homes were rated higher on home atmosphere and in manifest interest in education. The poorly adjusted girls tended to be city born. More of the poorly adjusted girls came from broken homes; more lived in homes without central heating systems; more were enrolled in the highest transiency schools.

Low scores on the Ineffective Thinking scale derived from projective test protocols were associated with good adjustment. The better adjusted children were as a group higher in mental age and superior in achievements to the poorly adjusted group.

Although there is always danger of over-generalization in drawing a composite picture, a composite picture does help to make salient relationships stand out. With the data in Tables 10 and 11 available as a corrective against oversimplification, the following composite pictures of the backgrounds of the well-adjusted and poorly-adjusted educable mentally handicapped children are presented.

The poorly-adjusted EMH boy has survived a process of elimination. He is a city dweller. He has been diagnosed, tested, observed, and found to be a bonafide mentally handicapped child in performance if not in potentiality. Socio-economically, he ranks lowest within the lowest socio-economic categories. He comes from a deprived home which has little interest in schooling. There is a fifty-fifty chance that he is known to a social agency. He may have severe emotional problems and at least a mild speech defect. He is likely to be a non-achiever.

The poorly-adjusted EMH girl is likely to be more acutely disturbed emotionally than the EMH boy. Situational factors such as broken homes, inadequate living conditions, and unstable neighborhood conditions may affect the overt behavior problems she presents. Like the poorly-adjusted EMH boy, she tends to be indigenous to the city. She may have at least a mild speech problem. Her family shows relatively little interest in education. Like the poorly-adjusted EMH boy, she tends to be a non-achiever.

The well-adjusted EMH child is likely to be rural or foreign born. He cooperates in a testing situation. He is relatively free of serious speech problems and of psychiatric defects. His parents attempt to be self-supporting. They show an interest in his getting an education. Schools receive a favorable impression of his home atmosphere. His principal and teachers do not consider him urgently in need of special class placement.

## Chapter 5

## Selective Factors in Placement

### Problem

One of the subsidiary hypotheses outlined in the original Project Proposal dealt with the effect of early identification and early placement of educable mentally handicapped children. It was hypothesized that early placement of EMH children was beneficial, and that children who were placed early would make more progress in achievement and adjustment than children who were placed late. To make a fair test of this hypothesis, it was necessary to know whether the educable mentally handicapped child who is placed early is the same kind of EMH child as the one who is placed late; whether he is comparable to the late-placed child or to the child who remains in the regular grades with respect to background conditions which affect progress. If he is comparable to the educable mentally handicapped child who is placed late with respect to conditions which affect progress, the question of relative effectiveness of early and late placement could be tested directly by comparing the growth of the early and late-placed children on our various measures of progress. If the educable mentally handicapped child who is placed early differs from the late-placed child with respect to conditions which affect progress, a direct comparison of the effect of early versus late placement would have to be considered biased.

The question of selective factors in placement is alsc relevant to a test of our major hypothesis, since for interpretation of findings it is necessary to know whether results are affected by any biasing factors.

The study of selective factors reported in this chapter attempted to ask a number of questions: How do children who are placed at an early age compare with children who are placed at a later age? Are there selective factors operating in placement? Does a particular kind of educable mentally handicapped child tend to be placed early? Is the educable mentally handicapped child who is placed early a different kind of EMH child from the one who is placed late? Is the child who is placed early the one who is most in need of placement? Is the child who is likely to make the least progress in regular grades the one who is placed early, and , conversely, the child who needs placement least the one who tends to be placed later, or to remain unplaced? Were there selective factors operating during the course of the Matched-Pair Experiment which might bias results?

## Procedure

### A Study of Selective Factors in Early Placement

All of the EMH children in the Matched-Pair Experiment who had been placed by the time of their retest were dichotomized by age of placement: (1) a group which had been placed at 8 years of age or earlier, and, (2) a group which had been placed at age 9 or later. The two groups were compared on seven matching variables and on ten of the major factors which differentiated either the criterion groups on initial achievement or the criterion groups on adjustment. The early-placed and late-placed children were compared on the following variables:

a. Matching Variables
    - Foreign Language Spoken in the Home
    - Chronological Age
    - Sex
    - Community Socio-Economic Ratings
    - Suspected Brain Injury
    - Speech Defects
    - Educational Experience in the Rural South

b. Variables Differentiating Criterion Achievement or Criterion Adjustment Groups
    - Validity of IQ Questioned
    - Contact with Social Agencies

Crowded Home Conditions

Central Personality Patterns from Behavior Checklist

Housing Conditions

Psychiatric Defects, Suspected or Diagnosed

Parental Occupation

Family Stability Syndrome

Ratings of Family Educational Aspiration Level

Ratings of Home Pressure for Achievement

### A Study of Selective Factors Operating During the Course of the Cooperative Research Project Matched-Pair Experiment

Three categories of EMH children placed in special classes were compared in terms of time of placement:

a.. Pupils placed September, 1957, or before.

b.. Pupils placed October, 1957, through September, 1960.

c.. Pupils available for placement, put not placed before September, 1960.

The three time-of-placement groups were compared on the same matching variables and on variables related to achievement and adjustment as were the early-placed children and late-placed children in the comparison above.

### Selective Factors in Placement as Related to Criterion Achievement and Adjustment Groups

Four categories of cases in terms of time of placement were compared with respect to membership in the criterion achievement and adjustment groups:

a.. Pupils placed September, 1957, or before.

b.. Pupils placed October, 1957, through September, 1958.

c.. Pupils placed October, 1958, through September, 1960.

d.. Pupils not placed before September, 1960.

The four placement groups were compared in terms of the number of children in the high, medium, and low groups in progress in achievement during a one-year interval, and also in terms of the high, medium, and low criterion adjustment groups. The procedures for selection of the criterion groups are described in Chapters 3 and 4.

## Results

### Selective Factors in Early Placement

The following factors differentiated between the groups of EMH children who were placed at age 8 and below and the group placed at age 9 and above: (a) Chronological age, (b) rural South educational background, and (c) Community socio-economic ratings. A smaller proportion of the early-placed than of the late-placed educable mentally handicapped children had rural South educational backgrounds. As a group, the early-placed children were younger. The early placed EMH children, as a group, came from higher socio-economic community areas than the children who were placed late. On the family socio-economic scale the EMH children who were placed early tended to be lower in socio-economic status and to be supported to a relatively greater extent by Aid to Dependent Children than the late-placed children. This trend failed to reach the five per cent level of statistical significance, however.

None of the other factors studied differentiated between the children who were placed at earlier and later ages. The data on selective factors in early placement are summarized in Table 13.

### Selective Factors in Placement Operating During the Course of the Cooperative Research Project Matched-Pair Experiment

The following factors were found to be related to the time of placement during the course of the experiment:

#### Chronological Age

Children 12 years of age or older at time of first testing were compared with children less than 12 years of age at the time of first testing. A greater proportion of the younger children remained unplaced by September, 1960. A greater proportion of the older children were either already placed by September, 1957, or were still unplaced in September, 1960.

Table 13

Selective Factors in Early Placement

| Age at time of first testing: | Age at Placement<br>8 or below | <br>9 or above | <br>Totals |
|---|---|---|---|
| 12 or above | 41 | 129 | 170 |
| 11 or below | 124 | 127 | 251 |
| | 165 | 256 | 421 |
| | $X^2$= 26.138 | df= 1 | P= .00001 |

| Community Socio-Economic Status: | 8 or below | 9 or above | Totals |
|---|---|---|---|
| IV or above (Average or higher) | 21 | 21 | 42 |
| III | 40 | 42 | 82 |
| I-II (low) | 104 | 193 | 297 |
| | 165 | 256 | 421 |
| | $X^2$= 7.39 | df= 2 | P= .05 |

| Family Socio Economic Scale: | 8 or below | 9 or above | Totals |
|---|---|---|---|
| Supported by: | | | |
| Mother on ADC | 48 | 79 | 127 |
| Both parents; both unskilled | 7 | 22 | 29 |
| Father, unskilled | 35 | 76 | 111 |
| Father, semi-skilled | 22 | 27 | 49 |
| Father, skilled | 25 | 23 | 48 |
| | 137 | 227 | 364 |
| | $X^2$= 9.38 | df= 4 | P= .052 |

| Occupation of Chief wage earner: | 8 or below | 9 or above | Totals |
|---|---|---|---|
| Semi-skilled or higher | 58 | 72 | 130 |
| Unskilled | 66 | 129 | 201 |
| | 124 | 195 | 325 |
| | $X^2$= 3.39 | df= 1 | P= .068 |
| | $X^2$= 3.83 | df= 1 | P= .05 * |

* Without Yates' Correction

Validity of IQ Questioned

A smaller proportion of children whose IQ's were questioned were placed early, and a larger proportion of children whose IQ's were questioned than of those whose IQ's were not questioned were still unplaced in September, 1960.

Community Socio-Economic Status

EMH children from socio-economic community area classifications I and II, the areas of lowest socio-economic status, were placed relatively rapidly during the course of the experiment. A disproportionate number of EMH children in community area classification III were already placed by September, 1957. A somewhat smaller than expected proportion of children from above average communities; i.e.; Category IV and above, were placed during the course of the experiment.

Reason for Non-Placement

Cases not placed at time of first testing because placement was not considered urgent were compared with cases not placed at the time of first testing because of lack of transportation or space, or because of parental objection. A significantly greater proportion of pupils who had not been considered in urgent need of placement than of pupils not placed for other reasons remained unplaced at the end of the experiment. Children who had not been placed originally because of lack of transportation or lack of space were placed relatively rapidly during the course of the experiment.

Contact with Social Agencies

A smaller proportion of the pupils known to social agencies than of pupils not known to social agencies were still unplaced in September, 1960.

Housing

Pupils living in one-family houses, apartments, or two flats were compared with pupils living in rooming houses, basements, behind or over stores, in public housing, or in housing facilities not having central heating systems. The greater proportion of the pupils living in the more adequate housing facilities remained unplaced during the experiment; also, a larger proportion of pupils from the less desirable housing units were placed during the course of the experiment.

Crowding

Cases living in homes with a person-per-room ratio of 2.0 or less were compared with cases with a person-per-room ratio of 2.01 or more. Approximately equal proportions of the pupils placed during the course of the experiment were in the two person-per-room ratio categories. A larger proportion of the pupils from the more overcrowded homes were already placed by September, 1957, however, while a greater proportion of pupils from the less crowded homes remained unplaced at the end of the experiment.

Family Stability Syndrome

Cases with two or more instability factors were compared with cases with one or no instability factors. A greater proportion of pupils with 2 or more instability factors were already placed by September, 1957. A slightly smaller proportion of cases with two or more instability factors than with fewer than two instability factors were placed during the course of the experiment, and a smaller proportion of the pupils with two or more instability facters remained unplaced at the end of the experiment.

Positive findings on selective factors operating during the course of these experiments are presented in Table 14.

Summary

This chapter reports on studies of selective factors in placement which were carried out as a check upon possible sources of bias in the Cooperative Research Project experiments.

Selective factors are likely to be influenced by local and temporal conditions. The findings reported in this chapter should therefore be considered limited to the Chicago educable mentally handicapped sample of 1957 to 1960. The findings are

## Table 14

### Selective Factors in Placement Operating During the Course of the Cooperative Research Project Experiments

|  | Age at Time of First Testing |  |  |  |
|---|---|---|---|---|
|  | 11 or below |  | 12 or above |  |
| CA: | f | Theoretical Frequency | f | Theoretical Frequency |
| Placed Sept. 1957 or earlier | 155 | (160.8) | 117 | (111.11) |
| Placed Oct. 1957 - Sept. 1960 | 164 | (146.09) | 83 | (100.90) |
| Not placed before Sept. 1960 | 56 | ( 68.02) | 59 | ( 46.97) |

$X^2 = 11.073$ df = 2 P= .004

| IQ Questioned: | IQ Questioned f | Theoretical Frequency | IQ Not Questioned f | Theoretical Frequency |
|---|---|---|---|---|
| Placed Sept. 1957 or earlier | 50 | (63.92) | 222 | (208.07) |
| Placed Oct. 1957 - Sept. 1960 | 64 | (58.04) | 183 | (188.95) |
| Not placed before Sept. 1960 | 35 | (27.02) | 80 | ( 87.97) |

$X^2 = 7.29$ df = 2 P= .03

|  | Community Socio-Economic Category |  |  |  |  |  |
|---|---|---|---|---|---|---|
|  | I-II |  | III |  | IV |  |
| Community Socio-Economic Status: | f | Theoretical Frequency | f | Theoretical Frequency | f | Theoretical Frequency |
| Placed Sept. 1957 or earlier | 176 | (189 .19) | 67 | (55.77) | 29 | (27.02) |
| Placed Oct. 1957 - Sept. 1960 | 189 | (171.80 ) | 38 | (50.64) | 20 | (24.54) |
| Not placed before Sept. 1960 | 76 | ( 79.99) | 25 | (23.58) | 14 | (11.43) |

$X^2 = 9.90$ df = 5 P = .04

|  | Reason for Non-Placement at time of First Testing |  |  |  |  |  |
|---|---|---|---|---|---|---|
|  | Parental Resistance to Placement |  | Not Placed, No Transportation or No Space |  | Placement Not Considered Urgent |  |
| Reason for Non-Placement: | f | Theoretical Frequency | f | Theoretical Frequency | f | Theoretical Frequency |
| Placed Sept. 1957 or earlier* | 5 | ( 3.03) | 16 | (18.42) | 5 | ( 4.55) |
| Placed Oct. 1957 - Sept 1960 | 9 | (11.31) | 78 | (68.73) | 10 | (16.96) |
| Not placed before Sept. 1960 | 12 | (11.66) | 64 | (70.85) | 24 | (17.49) |

$X^2 = 10.298$ df = 4 P = .05

*Note: These findings require qualification because of small number of cases in the first placement category.

Table 14 continued

Selective Factors Table P. 2

| Reason for Non-Placement | Reason for Non-Placement<br>Not placed, No transportation, or No space | Placement not Considered Urgent | Totals |
|---|---|---|---|
| Placed before Sept. 1960 | 94 | 15 | 109 |
| Not placed before Sept. 1960 | 64 | 24 | 88 |
| Totals | 158 | 39 | 197 |

$X^2 = 4.78$ df = 1 P = .05

| Contact with Social Agencies | Contact with Social Agencies f | Theoretical | No Contact with Social Agencies f | Theoretical |
|---|---|---|---|---|
| Placed Sept. 1957 or earlier | 130 | (124.41) | 142 | (147.58) |
| Placed Oct. 1957 - Sept. 1960 | 121 | (112.98) | 126 | (134.01) |
| Not placed before Sept. 1960 | 39 | ( 52.60) | 76 | ( 62.39) |

$X^2 = 7.99$ df = 2 P = .018

| Housing: (Residence in socio-economic areas I and III only) | Living in one family homes, two flats, or apartments f | Theoretical | Living in rooming houses, basements, above or behind stores, in public housing, or in homes without central heating f | Theoretical |
|---|---|---|---|---|
| Placed Sept. 1957 or before | 179 | (179.85) | 91 | (90.14) |
| Placed Oct. 1957 - Sept. 1960 | 157 | (164.53) | 90 | (82.46) |
| Not placed before Sept. 1960 | 85 | ( 76.60) | 30 | (38.39) |

$X^2 = 6.90$ df = 2 P = .032

| Crowding: | Person-per-room ratio 2.0 or less f | Theoretical | Person-per-room ratio above 2.0 f | Theoretical |
|---|---|---|---|---|
| Placed Sept. 1957 or earlier | 216 | (223.52) | 56 | (48.47) |
| Placed Oct. 1957- Sept. 1960 | 201 | (202.97) | 46 | (44.02) |
| Not placed before Sept. 1960 | 104 | ( 94.50) | 11 | (20.49) |

$X^2 = 6.88$ df = 2 P = .032

Table 14 continued

Selective FactorsTable P 3.

| Family Stability Syndrome: | Two or more instability factors in the case f | Theoretical | One or no instability factors in case f | Theoretical |
|---|---|---|---|---|
| Placed Sept. 1957 or earlier | 86 | (72.07) | 186 | (199.92) |
| Placed Oct. 1957 - Sept. 1960 | 58 | (65.45) | 189 | (181.54) |
| Not placed before Sept. 1960 | 24 | (30.47) | 91 | ( 84.53) |

$X^2 = 5.92$ df = 2 P= .052

instructive, however, in demonstrating the importance of taking local selective factors into consideration. A study of selective factors in early placement indicated that the children who were placed at an earlier age differed significantly from the children who were older at the time of their placement on three variables which had been considered so important that they were employed as matching variables in the major experiment. These variables were: chronological age, community socio-economic status, and rural South educational backgrounds. Both within the sample as a whole, and between the placement groups, the children with rural South educational backgrounds were significantly older than the children without rural South educational backgrounds, and they also tended to reside in areas of lower socio-economic status. Since these factors are related to a significant degree either to measures of achievement or of adjustment, it is apparent that direct comparisons of the progress of early placed and late placed EMH children would be biased by selective factors. Therefore, a test of hypothesis 1a, as originally proposed, was not made from our data.

A study of the selective factors related to the achievement and adjustment of EMH children operating during the course of the experiment showed that cases remaining unplaced during the course of the experiment tended to be cases with the validities of their IQ's questioned and cases which were not considered in urgent need of placement. Pupils given priority in placement tended to be of low socio-economic status, with correlates of deprivation such as inadequate housing, contact with social agencies, extreme overcrowding, and family instability.

It may be concluded from these studies of selective factors in placement that the children who were placed during the course of the experiment, as a group, tended to be children who were more in need of placement than the children who remained unplaced. It was therefore considered advisable to compare the matched pairs in the major experiment on factors other than the variables on which the cases were matched as further checks upon possible sources of bias.

# Chapter 6

## . Comparison of Progress of Special Class and Regular Grade Groups

This chapter will report on tests of the major hypothesis in the Cooperative Research Project Matched-Pair Experiment and on checks upon possible sources of bias which might have influenced results. The progress of the educable mentally handicapped children placed in special divisions was compared with the progress of the matched cases placed in regular classes over one and two-year intervals on academic measures, on measures of overt adjustment, and on test performance.

### Procedure

The special class and regular grade groups of educable mentally handicapped children were compared on progress over one and two year intervals on the following academic measures:

Stanford Achievement Test: Reading
Stanford Achievement Test: Arithmetic
Metropolitan Reading Readiness Test
Chicago Test of General Information and General Comprehension
Cooperative Research Project Practical Reading Test
Cooperative Research Project Word Recognition Test
Cooperative Research Project Speech Checklist

The two groups were compared on change in adjustment ratings made by teachers and staff examiners and on measures derived from teacher and examiner behavior checklists. From Adjustment Rating Scales filled out by teachers, they were compared on Adjustment Rating Scale Scores and on ratings of progress on Over-all Classroom work, Over-all Classroom Behavior, Adjustment to Other Children, Social Participation, and Social Adjustment Total Score.

From the Behavior Checklist, which was filled out by teachers, the groups were compared on changes in central personality patterns derived statistically from combinations of scores on the Behavior Checklist and on five Behavior Checklist scale scores, as follows: Well-Adjusted Score, Passive Score, Aggressive Score, Motivation Score, and Responsibility Score.

The two groups were compared on four measures derived from Examiner's ratings and observations. These were personality categorizations and motivation ratings and scores on Relationship with Examiner and on Negative Physical Characteristics which were derived from the checklist record of the Examiner's observations.

Criterion measures of adjustment from pupil performance included the Interest Maturity Test score and ratings of the subject's acceptance of others and feeling of acceptance by others, which were made from clinical judgments of his responses to the Sociometric Questions Interview.

Eight scales derived from the analysis of the Thematic Apperception Test and Michigan Picture Test protocols were used to compare the progress of the special class and regular grade groups on personality attributes. In addition, the two groups were compared on change on adjustment levels, derived from patterns of stanine scores on the eight personality scales on which progress was compared.

Progress on the Practical Reading Test and the Sociometric Interview were compared only on a one-year interval, since these instruments were not available at the time of first testing.

The construction and data on reliability and validity of criterion measures which were developed in the Chicago Cooperative Research Project are being reported in separate papers.

## Findings

Of the entire sample of cases tested during the first year of the experiment, 562 cases were retested one year later. The median gain in reading over a one-year period for retested cases with mental ages of 6.0 and above was .48 year, and the median gain in arithmetic during the same interval was .44 year. The upper quartile in mean gains during the one-year period was .88 in reading and .74 in arithmetic, the lower quartiles were .18 both in reading and arithmetic. Thus, on the average, the EMH children in the experiment gained less in academic achievement during a one-year period than might be expected of their IQ, and more than 25 per cent of the entire sample gained less than two-tenths of a year in reading and arithmetic during a one-year period.

Thirteen per cent of the retested cases with mental ages of 6.0 or above made no gain in Average Reading, or showed a loss during the one-year interval, while seventeen per cent gained a full year or more. In arithmetic, thirteen per cent of the retested cases made no gain or showed a loss in Arithmetic score, compared with sixteen per cent who gained a full year or more.

Comparisons of the progress of the matched groups of special class and regular grade children are given in Tables 15 to 20,inclusive. One hundred forty pairs were retested over a one-year interval, and sixty-four pairs over a two-year interval. Subjects were included in the one-year comparisons if they spent at least eight of ten school months in their respective placements; i.e., in special classes or in regular classes, and they were included in the two-year comparisons if they spent at least seventeen of the twenty school months in their respective placements.

Differences in Achievement

Table 15 compares the progress of the special class and regular class groups on measures of achievement during a one-year interval .The mean gains in reading for both the special class and regular class groups were approximately five-tenths year. The mean gain in arithmetic for the special class group was five-tenths year, and for the regular class group the mean gain in arithmetic was approximately six-tenths year. Of all of the achievement measures on which progress during a one-year interval was compared, a significant difference between the gains of the two groups was found only in arithmetic. This difference was statistically significant at the five per cent level, and was in favor of the regular class group. As shown on Table 16, none of the two-year gains in achievement between the special class and regular class groups differed significantly at the five per cent level of confidence, although a difference significant at the ten per cent level was found in favor of the regular class group in Average Reading.

## Table 15

## Comparison of Special Class and Regular Class Groups on Progress in Achievement During One-Year Interval

| Criterion | Progress of Groups | | | | |
|---|---|---|---|---|---|
| | | | | Significance Test | |
| Stanford Achievement Test | No. of Pairs | Special Class M | Regular Class M | t | $\chi^2$ |
| Paragraph Meaning | 140 | .514 | .534 | .271 | |
| Word Meaning | 140 | .462 | .517 | 1.169 | |
| Average Reading | 140 | .495 | .530 | .819 | |
| Arithmetic Reasoning | 140 | .526 | .553 | .516 | |
| Arithmetic Computation | 140 | .479 | .616 * | 2.276 * | |
| Average Arithmetic | 140 | .490 | .599 * | 2.209 * | |
| Chicago Test of General Information and General Comprehension | | | | | |
| GICT, Total Score, not including the Ethical Comprehension Test | 136 | 7.735 | 7.757 | .035 | |
| Health, Physical Education, and Safety | 138 | 1.214 | 1.300 | .831 | |
| Science | 138 | 1.664 | 1.993 | .878 | |
| Social Studies | 138 | 2.107 | 2.071 | .190 | |
| Arithmetic | 136 | 2.243 | 2.364 | .086 | |
| Ethical Comprehension | 136 | 1.719 | 1.529 | .288 | |
| Word Recognition Test | 55 | 2.370 | 3.124 | 1.678 | |
| Speech Checklist | | | | | |
| Over-all Speech Rating | 139 | .014 | .129 | | 1.149 (1df) |

* Difference statistically significant at 5% level.

## Table 16

### Over-all Comparison of Special Class and Regular Class Groups on Progress in Achievement During Two-Year Interval

| Criterion | Progress of Groups | | | | | |
|---|---|---|---|---|---|---|
| | Special Class | | Regular Class | | Significance Test | |
| | M | s | M | s | Pairs | t |
| Stanford Achievement Test | | | | | | |
| Paragraph Meaning | .900 | .712 | 1.08 | .836 | 64 | 1.46 ns |
| Word Meaning | .722 | .501 | .873 | .699 | 64 | 1.48 ns |
| * Average Reading | .823 | .491 | .983 | .677 | 64 | 1.67 * |
| Arithmetic Reasoning | .933 | .726 | 1.01 | .794 | 64 | .89 |
| Arithmetic Computation | .844 | .683 | .941 | .758 | 64 | .72 |
| Average Arithmetic | .870 | .554 | .892 | .558 | 64 | 1.16 |
| General Information and Comprehension | | | | | | |
| GICT, exclusive of ECT | 15.19 | 7.60 | 14.68 | 7.44 | 62 | 1.02 |
| Health, Physical Education, and Safety | 3.43 | 3.09 | 3.10 | 3.23 | 62 | .60 |
| Science | 3.55 | 2.57 | 3.54 | 2.63 | 62 | .68 |
| Social Studies | 4.86 | 3.39 | 4.81 | 3.36 | 62 | .06 |
| Arithmetic | 4.15 | 2.47 | 4.00 | 3.08 | 62 | .31 |
| Ethical Comprehension | 4.11 | 6.00 | 2.78 | 6.51 | 62 | .25 |
| Practical Reading Test | | | | | | |
| Advanced | | - | | | 22 | .63 |
| Primary | -- | - | | - | 17 | 1.09 |
| Speech Checklist | | | | | | |
| Over-all Speech Rating | .127 | .237 | -.031 | .21 | 63 | 1.30 |

*The difference in average reading was significant at the ten per cent level of confidence. None of the differences were statistically significant at the five per cent level of confidence.

### Differences in Adjustment

Table 17 provides a comparison of the progress in adjustment of the special class and regular class groups during a one-year interval. None of the differences in measures of adjustment derived from teacher or examiner ratings or observations were statistically significant, nor did the two groups differ significantly on change in Interest Maturity Test scores.

Over a two-year interval, the regular grade group showed a greater gain in teacher ratings of classroom work, while on over-all ratings of adjustment, the two groups did not make significantly different gains. On ratings from the sociometric interviews, the special class group gain was larger than the regular grade group at the ten per cent level of significance, but not at the five per cent level.

### Differences in Personality Test Performance

The special class and regular class groups were compared on change over one-and two-year periods on eight scales derived from analysis of Thematic Apperception Test and Michigan Picture Test protocols and on change in adjustment levels derived from patterns of scale scores. The coding and scoring of these scales, data on reliability, and available evidence of construct validity are reported in Morel and Simons (1961). Over a one-year period the regular grade group made significantly greater gains on the Gross Productivity Scale, and the regular class boys also made a greater gain on the Effective Productivity Scale .

Over a two-year period, the mean Hostility Scale score of the regular group remained about the same, while the mean Hostility Scale score of the special class group decreased by more than one full stanine. This was a statistically significant difference in favor of the special class group. Over a two-year period, the special class group also showed greater gains on the Positive Value Systems Scale and a greater decrease on the Insecurity Scale, while the regular grade showed a greater decrease in Passivity Scale scores. The differences between the two groups on these scales did not reach the five per cent level of significance. The Passivity and Positive Values Scales were

## Table 17

### Comparison of Special Class and Regular Class Groups on Progress in Adjustment During One-Year Interval

| Criterion | Progress of Groups | | | |
|---|---|---|---|---|
| | Special Class | | Regular Class | |
| | M | Mdn. | M | Mdn. |
| Adjustment Rating Scales(Teacher) | | | | |
| Adjustment Rating Scale | +.160 | +.053 | +.492 | +.638 |
| Overall Classroom Work | -.031 | -.007 | +.219 | +.172 |
| Overall Classroom Behavior | +.068 | +.09 | -.023 | 0.00 |
| Adjustment to Other Children | +.129 | +.054 | +.062 | +.007 |
| Social Participation | +.030 | +.100 | +.155 | +.105 |
| Social Adjustment Score | +.144 | +.081 | +.217 | +.155 |
| Behavior Checklist (Teacher) | | | | |
| Well Adjusted | +1.040 | +1.000 | +1.008 | +1.000 |
| Passive | - .976 | - .812 | - .656 | - .611 |
| Aggressive | - .640 | - .417 | - .914 | - .722 |
| Motivation | + .920 | + .714 | + .930 | + .500 |
| Responsibility | + .616 | + .333 | + .500 | + .143 |
| Central Personality Pattern | | | | |
| Obeservation Checklist Data (Examiner) | | | | |
| Personality Categorization | | | | |
| Motivation Rating | | | | |
| Relationship Score | - .103 | - .085 | - .207 | - .091 |
| Negative Physical Characteristics Score | - .073 | - .026 | - .089 | - .132 |
| Interest Maturity Test Score | +1.580 | +1.438 | +1.524 | +1.577 |

Significance of difference between groups was tested by one of three tests of significance: t, Wilcoxen t, or $X^2$. None of the differences between the two groups were statistically significant.

## Table 18

### Comparison of Special Class and Regular Class Groups on Progress in Adjustment During Two-Year Interval

| Criterion | Pairs | Test of Significance<br>t |
|---|---|---|
| **Adjustment Rating Scales (Teacher)** | | |
| Adjustment Rating Scale | 58 | 1.16 |
| Over-all Classroom Work | 58 | .08 |
| Over-all Classroom Behavior | 58 | 2.62* |
| Adjustment to Other Children | 61 | .64 |
| Social Participation | 58 | .70 |
| Social Adjustment Score | 58 | .06 |
| **Behavior Checklist (Teacher)** | | |
| Well-Adjusted Scale | 56 | .12 |
| Passive Scale | 56 | .05 |
| Aggressive Scale | 56 | .72 |
| Motivation Scale | 56 | .07 |
| Responsibility Scale | 56 | .22 |
| Central Personality Pattern | 56 | .07 |
| **Observation Checklist Data (Examiner)** | | |
| Personality Categorization | 55 | .24 |
| Motivation Rating | 55 | 1.61 |
| Relationship Score | 60 | .05 |
| Negative Physical Characteristics Score | 60 | .34 |
| **Interest Maturity Test** | 27 | .09 |
| **Sociometric Questions** | | |
| Over-all Rating | 47 | 1.08 |

* Difference significant at 5 percent level in favor of Graded Group.

## Table 19

### Comparison of Special Class and Regular Class Groups on Change in TAT-MPT Scale Scores During One and Two Year Intervals

| One Year Interval: | Change in Stanine Scores | | | | | | t | p | Group with Higher Mean |
|---|---|---|---|---|---|---|---|---|---|
| Scale | No. of Pairs | Special Class Mean | Special Class sd | | Regular Class Mean | Regular Class sd | | | |
| Gross Productivity | 128 | -0.531 | 1.743 | | +0.273 | 1.86 | 3.55 | .001* | Reg |
| Effective Productivity | 128 | -0.203 | 1.859 | | +0.4141 | 1.759 | 2.683 | .01 * | Reg |
| Abnormality Scale (X) | 128 | -0.6641 | 2.082 | | -0.555 | 2.158 | .429 | .68 | |
| Ineffective Thinking | 128 | -0.742 | 1.96 | | -0.563 | 1.756 | .79 | .44 | |
| Positive Value Systems | 128 | +0.633 | 2.303 | | +0.375 | 2.245 | .83 | .40 | |
| Hostility | 128 | -0.570 | 2.226 | | -0.117 | 2.002 | 1.54 | .12 | |
| Passivity | 128 | -0.281 | 2.384 | | -0.125 | 2.459 | .48 | .62 | |
| Insecurity | 128 | -0.305 | 2.226 | | -0.242 | 1.979 | .23 | .80 | |
| Adjustment Levels | | | | | | | | | |
| Single Unit | 128 | + ,570 | 1.54 | | +0.16 | 1.48 | .323 | n.s. | |
| Double Unit | 128 | | | | | | 2.854 | .01 | |
| Two Year Interval: | | | | | | | | | |
| | N | | | N | | | | | |
| Gross Productivity | 64 | 0.391 | 1.957 | 64 | + .797 | 2.139 | 1.05 | .30 | |
| Effective Productivity | 64 | +0.859 | 2.152 | 64 | +1.00 | 1.894 | 0.389 | .70 | |
| Abnormality Scale (X) | 64 | -0.48 | 1.976 | 64 | -0.48 | 2.211 | 0.000 | 1.00 | |
| Ineffective Thinking | 64 | -1.375 | 1.91 | 64 | -0.969 | 1.95 | 1.35 | .18 | |
| Positive Value Systems | 64 | +1.563 | 2.31 | 63 | + .778 | 2.206 | 1.887 | .067 | |
| Hostility | 64 | -1.25 | 2.07 | 63 | + .094 | 2.083 | 3:598 | .001* | |
| Passivity | 64 | +0.125 | 2.433 | 63 | - .625 | 2.36 | 1.862 | .071 | EMH |
| Insecurity | 64 | -0.969 | 2.108 | 63 | -0.397 | 2.159 | 1.556 | .12 | Reg. |
| Adjustment Levels | | | | | | | | | |
| Single Unit | 64 | + .734 | 1.49 | 64 | + .484 | 1.44 | .86 | .40 | |
| Double Unit | 64 | | | | | | 1.19 | .22 | |

*Indicates significance at least at .05 level.

Table 20

Comparison of Special Class and Regular Class Groups on Change in TAT-MPT Scale Scores During a One-Year Period by Sex

| Boys: (N=71)<br>Scale | t | P | Group with Higher Mean Gain |
|---|---|---|---|
| Gross Productivity | 2.77 | .01 | Reg. |
| Effective Productivity | 2.58 | .05 | Reg. |
| Abnormality Scale (X) | 1.09 | .28 | |
| Ineffective Thinking | .78 | .42 | |
| Positive Value Systems | .27 | .80 | |
| Hostility | 1.40 | .16 | Reg. |
| Passivity | .19 | .84 | |
| Insecurity | .97 | .34 | |
| **Girls: (N=57)** | | | |
| Scale | | | |
| Gross Productivity | 2.27 | .05 | Reg. |
| Effective Productivity | 1.30 | .20 | |
| Abnormality Scale (X) | .61 | .56 | |
| Ineffective Thinking | .37 | .72 | |
| Positive Value Systems | .94 | .34 | |
| Hostility | .67 | .50 | |
| Passivity | .97 | .38 | |
| Insecurity | .67 | .50 | |

*Indicates significance at least at .05 level.

at the ten per cent level of significance, and the Insecurity Scale difference was at the fifteen per cent level.

The differences between the special and regular class groups on the projective personality test scales are difficult to evaluate at this time in view of the difficulty of demonstrating validity for such scales, and in the absence of strong evidence of their reliability. One year test-retest reliabilities of the two Productivity scales and of the Ineffective Thinking Scale were above .50, but the one-year test-retest reliabilities of the other scales were between .30 and .38. Further, the theoretical position taken by the staff psychologists responsible for developing the scoring system of the TAT-MPT data was that only dynamic interrelationships among the scales could yield data of value in personality evaluation. Accordingly, in search of a measure of personality integration of greater stability than that of individual scale scores, a continuum of adjustment levels was postulated. A statement of their conception of an adequately functioning child with inferences about adequacy to be drawn from stanine scores on the personality scales was provided by Morel and Simons. This statement, and a statement of the theoretical significance of certain stanine scores on the eight TAT-MPT scales served as a basis for the postulated continuum of adjustment levels. Seven adjustment levels were designated. These levels were based upon patterns of stanine scores on the TAT-MPT scales, but did not completely satisfy the theoretical position of Morel and Simons on the importance of dynamic interrelationships among scale scores. Criteria for the adjustment levels, in terms of stanine scores on the TAT-MPT scales, are given in Morel and Simons, (1961). The test-retest reliability of the adjustment levels over a one-year period, corrected for coarse grouping, was .63. Therefore, although much more research is needed to demonstrate construct validity of the adjustment levels, of the scales, and of the interrelationships among the scales, at this stage of research on the scoring system, the adjustment levels have the advantage over single scales of greater demonstrable stability.

Differences between the special class and regular grade groups in change in adjustment levels from test to retest were determined for two gradations of change: (1) change in single adjustment levels; and (2) changes in double units, i.e.; changes over two-level intervals. Results were inconclusive. Over a one-year period, the regular grade group made a significantly greater improvement in double units. Neither group had a significant advantage in single units Over a two-year period, neither group made statistically significant greater gains in either single units or double units.

Sources of Bias

A number of lines of evidence were pursued in an effort to identify possible sources of bias affecting the comparison of the progress of the special class and regular class groups. The first type of evidence consisted of a comparison of the two groups on factors on which they were matched; the second was a comparison of the two groups on initial status on variables used to measure progress; the third was a comparison of the two groups on factors not employed as matching variables, but found to be related either to achievement or to adjustment.

Table 1 shows that the special class and regular class groups were not significantly different in seven matching variables: IQ, CA, educational experience in the Rural South, a record of brain injury, foreign language backgrounds, sex, and community socio-economic status. The groups were also similar with respect to the number of cases with validity of IQ's questioned and with respect to the length of the test-retest interval. As shown in Table 21, the special class and regular grade groups were also similar in initial achievement in reading, which was used both as a criterion variable and as a matching variable. On the Adjustment Rating Scales and the Well-Adjusted Scale of the Behavior Checklist, initial ratings given to mentally handicapped pupils in special classes by their own teachers were significantly higher than the ratings given their matched pairs by non-specialized teachers who taught these children as part of a regular grade.

Table 21

Comparison of Special Class and Regular Class Groups on Initial Status on Criterion Measures

| Criterion | Group | | Tests of Significance | | |
|---|---|---|---|---|---|
| | Special Class | Regular Class | Wilcoxen | | |
| | M | M | Test | t | df |
| Average Reading | 2.149 | 2.186 | 1.305 | 1.348 | 139 |
| Average Arithmetic | 2.336 | 2.351 | .609 | .159 | 139 |
| GICT minus ECT | 35.971 | 37.9 | 1.77 | 2.155* | 137 |
| Speech Rating[a] | | | | | |
| Adjustment Rating Scale | 11.259 | 9.489 | 5.216** | | |
| Well Adjusted Score, BCL | 25.404 | 23.909 | | 3.354** | 114 |

| Behavior Checklist (Teacher) Central Personality Pattern[a] | Special Class | Regular Class |
|---|---|---|
| Category | f | f |
| (1) Well Adjusted | 34 | 23 |
| (2) Mod. Well Adjusted | 63 | 61 |
| (3) Passive | 5 | 14 |
| (4) Passive Aggressive | 17 | 15 |
| (5) Hyperactive | 4 | --- |
| (6) Active Aggressive | 12 | 17 |
| (7) Mildly Aggressive | - | 2 |

| Observation Checklist Categorization (Examiner)[a] | | |
|---|---|---|
| (1) Passive | 16 | 25 |
| (3) Passive Aggressive | 11 | 8 |
| (5) Well Adjusted | 90 | 88 |
| (7) Hyperactive | 8 | 7 |
| (9) Active Aggressive | 2 | 4 |
| Well Adjusted-Passive | 6 | - |
| Well Adjusted-Aggressive | 2 | - |
| Passive Aggressive-Active Agg. | | 1 |

* Significant at 5% level
** Significant at 1% level

[a] Chi square tests of significance were made, but differences between groups did not reach the 5 per cent level of significance.

The special and regular class groups did not differ significantly on Behavior Checklist central personality patterns. In view of the fact that a teacher frame of reference has been shown to influence Adjustment Rating Scale scores, and, to a lesser degree, Behavior Checklist scores, (Itkin, 1960) and (Itkin, Brauer, and Richards, 1960), evidence that the two groups differed initially in overt adjustment must be considered at least inconclusive.

On the TAT-MPT Scales, the special class scored higher on the Gross Productivity Scale. Separate comparisons for boys and girls showed that it was the special class girls who accounted for this difference. The special class girls also received higher initial scores on the Passivity Scale than the regular class girls, while the special class boys received higher initial scores on the Hostility Scale than the regular class boys. (Table 22)

The two groups, as shown in Table 21, were similar in initial arithmetic achievement as well as in initial reading scores. The regular class group was significantly superior, however, to the special class group on the General Information and General Comprehension Test. Since the GICT has been reported elsewhere (Mullen, Itkin, and others, 1960) to correlate .81 with mental age, the higher showing of the pupils in the regular class group on the GICT suggests that more of the regular grade group may have had intelligence above that indicated by their past Stanford-Binet examinations.

An analysis of variance carried out to determine whether progress in achievement were related to levels of IQ and levels of initial achievement in reading showed a significant interaction between levels of IQ and initial level of reading ability and progress in arithmetic. Comparisons of the two groups were accordingly made for the two levels of IQ and two levels of initial achievement in reading in order to learn more about the IQ and achievement of the child who accounted for the relative superiority of the regular grade group in arithmetic. As shown in Table 23, the differences between the special class and regular grade children with IQ's above

Table 22

Comparison of Special Class and Regular Class Groups on Initial Status on TAT-MPT Scales

Initial Status of 128 Pairs Retested After One-Year Interval

| Boys:<br>Scale | N | Special Class | Regular Class | t | p | Group with Higher Mean |
|---|---|---|---|---|---|---|
| Gross Productivity | 71 | | | 1.14 | .40 | |
| Effective Productivity | 71 | | | .65 | .52 | |
| Abnormality Scale (X) | 71 | | | .44 | .65 | |
| Ineffective Thinking | 71 | | | 1.54 | .12 | EMH |
| Positive Value Systems | 71 | | | 1.43 | .15 | Reg |
| Hostility | 71 | | | 2.103 | .05 | *EMH |
| Passivity | 71 | | | .54 | .58 | |
| Insecurity | 71 | | | .69 | .48 | |

Girls: Initial Status of 128 Pairs Retested After a One-Year Interval

| Scale | N | Special Class | Regular Class | t | p | Group with Higher Mean |
|---|---|---|---|---|---|---|
| Gross Productivity | 57 | | | 2.15 | .03 | *EMH |
| Effective Productivity | 56 | | | 1.18 | .24 | |
| Abnormality Scale (X) | 57 | | | 1.26 | .21 | Reg. |
| Ineffective Thinking | 57 | | | .14 | .88 | |
| Positive Value Systems | 57 | | | .60 | .56 | |
| Hostility | 57 | | | .16 | .88 | |
| Passivity | 57 | | | 2.149 | .036 | *EMH |
| Insecurity | 57 | | | -0.30 | .76 | |

Table 22 (continued)

| Boys and Girls: | | Special Class | | Regular Class | | t | p | Group with Higher Mean |
|---|---|---|---|---|---|---|---|---|
| Scale | N | M | sd | M | sd | | | |
| Gross Productivity | 128 | 5.24 | 1.84 | 4.75 | 1.97 | 2.1 | .05 | *EMH |
| Effective Productivity | 128 | 5.09 | 1.97 | 4.78 | 1.94 | 1.3 | - | |
| Abnormality Scale (X) | 128 | 4.83 | 1.84 | 4.94 | 1.78 | .45 | - | |
| Ineffective Thinking | 128 | 4.97 | 1.85 | 4.76 | 1.95 | .94 | - | |
| Positive Value Systems | 128 | 4.81 | 2.01 | 5.18 | 2.00 | 1.5 | .14 | Reg. |
| Hostility | 128 | 5.08 | 1.95 | 4.70 | 1.86 | 1.57 | .12 | EMH |
| Passivity | 128 | 5.01 | 2.14 | 4.73 | 1.98 | 1.07 | - | |
| Insecurity | 128 | 4.97 | 1.89 | 4.89 | 1.79 | .33 | - | |
| Adjusting Levels | 128 | 3.67 | 1.23 | 4.28 | 1.17 | | | |

Table 23

Comparison of Special Class and Regular Class Groups on Progress in Achievement During One-Year Interval by IQ and Reading Levels (N=140 pairs)

| Test | | | | |
|---|---|---|---|---|
| | By IQ Levels | | | |
| | Both IQ'S 70 or Above t | df | One or Both IQ'S Below 70 t | df |
| Stanford Av.Reading | 1.410 | 62 | .396 | 76 |
| Stanford Av.Arithmetic | .194 | 62 | 2.563* | 76 |
| GICT minus ECT | .549 | 61 | .288 | 73 |
| ECT | .572 | 61 | .116 | 73 |
| | By Reading Levels | | | |
| | Both Initial Reading Scores 2.0 or Above t | df | One or Both Initial Reading Scores Below 2.0 t | df |
| Stanford Av. Reading | 1.415 | 69 | .136 | 69 |
| Stanford Av.Arithmetic | 1.305 | 69 | 1.712 | 69 |
| GICT minus ECT | .000 | 66 | .046 | 68 |
| | By Reading Levels for IQ'S of 70 and Above | | | |
| | Average Reading 2.0+ t | df | Average Reading 1.9- t | df |
| Av. Reading | 1.539 | 32 | .537 | 29 |
| Av. Arithmetic | .834 | 32 | 1.414 | 29 |
| GICT minus ECT | .085 | 32 | .585 | 28 |
| | By Reading Levels for IQ'S of 69 or Below | | | |
| | Average Reading 2.0 or Above t | df | Average Reading 1.9 or Below t | df |
| Average Reading | .362 | 36 | .913 | 39 |
| Average Arithmetic | 2.524* | 36 | 1.087 | 39 |
| GICT minus ECT | .071 | 33 | .385 | 39 |

*Significant at 5% level.

70 was not significantly different for subjects with initial reading scores of 2.0 or above and for those with reading scores below 2.0. Likewise, for special and regular class children with reading scores of 2.0 or above, progress in arithmetic for the two IQ levels was not significantly different. It was the below 70-IQ children whose initial reading scores were 2.0 or above who accounted for the superiority of the regular grade group in arithmetic. Together with the evidence on the initial superiority of the regular grade group on the GICT, this finding suggests that the IQ's of a greater number of regular grade children than of the special class children had been underestimated. These findings support the hypothesis that educable mentally handicapped children who remain in the regular grades when special class placement is available are as a group actually higher in true intelligence than indicated by their past record of performance on mental tests.

To check the comparability of the two groups on perceptual disturbance, comparisons of the Bender-Gestalt protocols of the two members of each pair were made by a staff psychologist. In making judgments as to "better" or "worse" Bender-Gestalt protocol, the rater did not have knowledge of placement of the members of the pair. This comparison indicated that the two groups were highly similar on their over-all Bender-Gestalt performance. A consistency check of the Bender-Gestalt comparisons made independently by use of a second staff psychologist showed a high degree of consistency of the judgments of the Bender-Gestalt protocols by the two psychologists.

The Sociometric Questions interview were administered for the first time during the retest year. On the first sociometric interview ratings, the special class group mean score was higher than the regular grade score at the ten per cent level of significance, but did not reach statistical significance at the five per cent level.

A further check on sources of Bias

The special class and regular class groups were compared on a number of variables which were found to discriminate between the criterion achievement and adjustment groups. The selection of these criterion groups is reported in Chapters 3 and 4. The two groups were compared on initial status on the following factors:

Ethical Comprehension Test Score
Support by Aid to Dependent Children
Known to Protective Social Agencies
Overcrowding
Inadequate Housing Conditions
Lack of Central Heating Systems
Family Socio-Economic Status Scale
Negative Scores on Relationship with Examiners
Examiner ratings of Home Pressure for Achievement
Examiner ratings of Family Educational Aspiration Level
Examiner ratings of Home Atmosphere
Examiner ratings of Parental Cooperativeness
Over-all Speech ratings
Broken Homes

No significant differences on any of these fourteen factors were found between the two groups of 140 subjects each who were retested at a one-year interval. The 64 pairs retested at a two-year interval were compared on: support by ADC, contact with social agencies, housing conditions, and broken homes. It was found that a significantly greater number of special class children than of regular grade children who were tested at a two-year interval had lived in homes without central heating systems at time of first testing.

## Summary

This chapter reported upon tests of the major hypothesis of the Cooperative Research Project Matched-Pair Experiment and upon possible sources of bias influencing results. Of the entire sample of retested cases with mental ages of 6.0 or above, the median gain in reading over a one-year period was .48 year and the median gain in arithmetic during the same interval was .44 year. On the average, the educable mentally handicapped children in the experiment gained less in academic achievement during a one-year period than might be expected of their IQ. More than twenty-five per cent of the entire sample gained less than two-tenths of a year in reading and arithmetic during a one-year period. Thirteen per cent made no gain in reading during a one-year period, and the same proportion made no gain in arithmetic.

On measures of achievement, the regular class group made a significantly larger gain in arithmetic over a one-year period, six-tenths year compared to a gain of five-tenths year for the special class group. No significant differences were found between the two groups in achievement over a two-year period, although the regular class group made a slightly larger, though not significantly greater gain in reading than did the special class group.

Gains in over-all adjustment ratings made by teachers did not differ significantly for the two groups. The regular grade group, however, made a greater improvement in ratings of Classroom Work for the two-year period. On ratings made from Sociometric Interviews, the special class group made a larger gain, but this advantage did not reach the five per cent level of significance.

Several measures derived from analysis of projective personality tests favored the regular grade group, while others favored the special class. The regular grade group made significantly greater gains on a Gross Productivity Scale over a one-year period, reflecting application to the task presented by the personality test. One of the two measures of change in levels of adjustment favored the regular grade group, although the special class group over a one-year period made a slightly higher mean gain.

Over a two-year period, the special class group showed a significantly greater decrease on the Hostility scale of the projective personality test analysis. There were also trends indicating greater gains for the special class group on a Positive Values Scale and greater decreases on an Insecurity Scale, while the regular class group showed a greater decrease on a Passivity Scale over a two-year period. Although these personality test data cannot be interpreted unambiguously until there is more evidence of validity of the scales, the findings from the projective personality test analysis, along with the trends from a Sociometric Interview analysis, tend to support the hypothesis that the emotional climate in special classrooms has a salutary effect upon the emotional adjustment of mentally handicapped children.

Investigations of possible sources of bias indicated that the two groups were well matched on many relevant factors: They were similar in tested IQ, in gross measures of socio-economic status, in rural South educational backgrounds, and in initial achievement in reading and arithmetic. Controls over the test-retest interval were very close. The two groups were similar in overt adjustment, as reflected in ratings of teachers and examiners. The groups were also similar in performance on the Bender-Gestalt test. There was evidence, however, of a selective factor operating in the direction of underestimation of the true intelligence of a greater number of children in the regular grade group. This bias was reflected in the higher initial scores on the Chicago Test of General Information and General Comprehension made by the regular grade group. Analysis of the progress of the two groups by two levels of IQ and two levels of reading achievement gave further evidence of greater underestimation of the IQ's of the regular grade group, as compared with the special class group. These analyses indicated that it was children with low IQ's but with relatively good reading ability who remained in regular grades who accounted for the superiority of the graded group in arithmetic. These data support the hypothesis that where special class placement is available, educable mentally handicapped children who remain in regular classes are as a group actually higher in true intelligence than indicated by their past record of performance on mental tests. This is an important source of bias which must be taken into consideration in interpreting comparisons of progress of EMH children in special classes with those in regular grades.

# Chapter 7

## Factors Associated with Rapid and Slow Progress in Special Classes and in Regular Grades

The studies reported in the present chapter were carried out to determine under what circumstances educable mentally handicapped children make better progress in special class placement and under what conditions they make better progress in regular classes. These studies attempted to answer the following questions: (1) What factors are associated with better achievement in special class placement than in regular class placement? (2) What factors are associated with better achievement in regular grade placement than in special grade placement? (3) What factors are associated with better adjustment in special classes than in regular classes? (4) What factors are associated with better adjustment in regular classes than in special class placement?

### Procedure

The Criterion groups of special class and regular class children who made the most and least progress during one year periods, according to the criteria described in Chapter 3, were used in the study of factors associated with rapid and slow academic progress as related to placement. The criterion groups of well adjusted and poorly adjusted children, according to the judgments of teachers and examiners, as described in Chapter 4, were used in the study of factors associated with good and poor adjustment as related to placement.

These comparisons were based upon all children retested at a one year interval who met certain criteria, not on the matched pairs alone. To be included in these comparisions, a child was required to have spent eight of ten school months in the same placement, i.e.; in special classes or in regular grades. Children with mental ages below 6.0 were included in the analyses of the adjustment criterion groups, but were excluded from the comparison of the achievement criterion groups.

The achievement groups of pupils making rapid, median and slow progress during the one year interval in the two placements were compared on the matching variables, on variables found to be related to achievement, and on classroom and school factors. The adjustment groups, who on the basis of agreement of teacher and examiner, were well or poorly adjusted in their placements, were compared on matching variables, on classroom and school factors, and on correlates of adjustment.

Comparisons of criterion groups were made according to the following pattern:

| Special Class Criterion Group | Compared with | Regular Class Criterion Group |
|---|---|---|
| Upper | | Upper |
| Lower | | Lower |
| Upper | | Middle & Lower |
| Middle & Lower | | Upper |
| Lower | | Middle & Upper |
| Middle & Upper | | Lower |

Findings:

Achievement as related to placement.

A comparison of the special class rapid progress group with the regular class rapid progress group showed three factors to discriminate between these two groups. A greater proportion of the special class rapid progress group lived in over-crowded homes; a greater proportion of the special class rapid progress group had family instability factors in their cases, and a greater proportion of the special class rapid progress group was considered well-adjusted by project examiners.

When the special class slow progress group was compared with the regular class slow progress group, it was found that two factors from the teachers' Behavior Checklist and two factors from the Adjustment Ratings scales completed by teachers discriminated between pupils making poor progress in achievement during the one-year period. A greater proportion receiving Passive and Passive-Aggressive categorizations on the Behavior Checklist were found among the regular class children making slow progress. The comparison of the slow progress children in the two groups indicated that passive children might be tolerated in regular classrooms, but their prognosis for achievement in regular classes was poor. On the other hand, the small number of Active-Aggressive and Hyperactive children in the slow progress regular class group suggested that poorly achieving Active-Aggressive children had a poor chance of remaining in regular grades if placement were available.

Above median scores on the Adjustment Rating Scale and on the rating on Overall Class Work, and above median scores on the Motivation Scale of the Behavior Checklist were more common in the special class slow progress group than in the regular class slow progress group. This finding was probably influenced by the tendency toward leniency in making these ratings on the part of special class teachers. The influence of the frame of reference of teachers in making adjustment ratings has been discussed earlier, and is reported in a separate paper (Itkin, 1960).

The usefulness of the teachers' Adjustment Rating Scales and Behavior Checklists in predicting how educable mentally handicapped children will adjust in regular classes may be seen from the data in Table 24. These data indicate that below median scores on the Adjustment Rating Scale and on Over-all Classroom Work and below median scores on the Motivation Scale of the Behavior Checklist prognosticate poor achievement of educable mentally handicapped children in regular classes. Thus, these data suggest that low scores on these scales may be utilized as an economical means of screening educable mentally handicapped children for priority of placement in special educational facilities.

What factors are associated with good progress in special class placement, but not good progress in regular grade placement? The comparisons of the backgrounds of the special class children in the rapid progress group with the regular grade children in the middle and the slow progress groups yielded six factors discriminating those children making rapid progress in special classes from those not making rapid progress in regular classes. A greater proportion of the special class rapid progress group had instability factors in their cases. A greater proportion of the special class children in the rapid progress group also had below median scores on the Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children. The special class children making rapid progress received significally higher scores on the Adjustment Rating Scale, on Overall Classroom Work, and on the Motivation Scale of the Behavior Checklist, and received significally lower scores in the Passive Scale of the Behavior Checklist than the regular grade children who were not in the rapid progress group.

### Table 24

### Factors Associated With Rapid and Slow Academic Progress of EMH Children During One-Year Interval as Related to Placement in Special Classes and Regular Grades: Illustrative Findings

| | Special Class Rapid Progress Group | Regular Grade Rapid Progress Group | Totals | df | $X^2$ | Level of Significance |
|---|---|---|---|---|---|---|
| Crowded Home Conditions: | | | | | | |
| Person per Room Ratio 1.50 and below | 25 | 33 | 58 | | | |
| Person per Room Ratio 1.51 and above | 34 | 18 | 52 | | | |
| | 59 | 51 | 110 | 1 | 4.614 | .05 |
| Family Stability Syndrome: [a] | | | | | | |
| No Instability Factors in Case | 14 | 25 | 39 | | | |
| One or More Instability Factors in Case | 45 | 26 | 71 | | | |
| | 59 | 51 | 110 | 1 | 11.201 | .001 |
| Personality Categorization by Examiner: | | | | | | |
| Well Adjusted | 37 | 24 | 61 | | | |
| Other Than Well Adjusted | 8 | 19 | 27 | | | |
| | 45 | 43 | 88 | 1 | 6.002 | .05 |

[a] Family Stability Syndrome defined in terms of four factors:

1. High mobility: four or more changes of school
2. Broken home
3. Inadequate housing: living in rooming houses, basements, or behind or over stores
4. Excessive overcrowding: person per room ratio 2.01 or higher

Page 2 Table 24 (continued)

| | Special Class Slow Progress | Regular Class Slow Progress | Totals | df | $X^2$ | Level of Significance |
|---|---|---|---|---|---|---|
| **Central Personality Patterns from Behavior Checklist: (Teacher Report)** | | | | | | |
| Well Adjusted | 16 | 8 | 24 | | | |
| Moderately Well Adjusted plus Mildly Aggressive | 33 | 18 | 51 | | | |
| Passive | 5 | 9 | 14 | | | |
| Passive-Aggressive | 2 | 7 | 9 | | | |
| Active-Aggressive plus Hyperactive | 12 | 2 | 14 | | | |
| | 68 | 44 | 112 | 4 | 13.624 | .01 |
| **Adjustment Rating Scale Score:** | | | | | | |
| Above Median | 40 | 15 | 55 | | | |
| Below Median | 27 | 28 | 55 | | | |
| | 67 | 43 | 110 | 1 | 5.499 | .05 |
| **Ratings on Over-all Classroom Work from Adjustment Rating Scale:** | | | | | | |
| Above Median | 41 | 14 | 55 | | | |
| Below Median | 26 | 29 | 55 | | | |
| | 67 | 43 | 110 | 1 | 7.483 | .01 |
| **Motivation Scale from Behavior Checklist:** | | | | | | |
| Above Median | 40 | 16 | 56 | | | |
| Below Median | 28 | 28 | 56 | | | |
| | 68 | 44 | 112 | 1 | 4.529 | .05 |

Page 3 Table 24 (continued)

| | Special Class Rapid Progress Group | Regular Class Middle and Slow Progress Groups | Totals | df | $X^2$ | Level of Significance |
|---|---|---|---|---|---|---|
| **Family Stability Syndrome:** | | | | | | |
| No Instability Factors in Case | 14 | 70 | 84 | | | |
| One or More Instability Factors in Case | 45 | 86 | 131 | | | |
| Totals | 59 | 156 | 215 | 1 | 7.175 | .01 |
| **Chicago Test of General Information and General Comprehension** | | | | | | |
| Above Median | 22 | 85 | 107 | | | |
| Below Median | 35 | 71 | 106 | | | |
| Totals | 57 | 156 | 213 | 1 | 3.605 | .06 |
| **Passive Scale, Teachers' Behavior Checklist:** | | | | | | |
| Above Median | 17 | 86 | 103 | | | |
| Below Median | 39 | 64 | 103 | | | |
| Totals | 56 | 150 | 206 | 1 | 10.815 | .001 |
| **Motivation Scale Behavior Checklist:** | | | | | | |
| Above Median | 39 | 64 | 103 | | | |
| Below Median | 17 | 86 | 103 | | | |
| Totals | 56 | 150 | 206 | 1 | 10.815 | .001 |
| **eacher's Adjustment ating Scale:** | | | | | | |
| Above Median | 35 | 68 | 103 | | | |
| Below Median | 20 | 84 | 104 | | | |
| Totals | 55 | 152 | 207 | 1 | 5.039 | .05 |

What factors were associated with slow academic progress in regular grades, but not with slow academic progress in special classes? There was relatively more family instability in the slow progress regular grade group. The EMH pupils making slow progress in regular classes were characterized by below median scores on the Adjustment Rating Scale, on Over-all Classroom Work, and on the Motivation Scale of the Behavior Checklist, and by above median scores in the Passive Scale of the Behavior Checklist. They received a smaller proportion of Well Adjusted categorizations and a greater proportion of Passive and Passive-Aggressive personality categorizations on teachers' Behavior Checklists than the special class children not in the slow progress group. The data in Table 24 indicate that children with Active-Aggressive and Hyperactive personality categorizations on the Behavior Checklist have a relatively good prognosis for achievement in special classes, while the likelihood of their retention in regular classes is slight.

The findings on academic progress of educable mentally handicapped children as related to placement indicate that EMH children with unfavorable conditions in their backgrounds, such as overcrowding and family instability, and children characterized as passive orpassive-aggressive on the teachers' Behavior Checklist have a better chance of making adequate progress in special classes than in regular classes. Educable Mentally Handicapped Children with these factors in their backgrounds have a relatively good chance of making adequate progress in special classes, while they have a fair or poor chance of making good academic progress in regular classrooms.

Our findings also indicate the usefulness of the Behavior Checklist and Adjustment Rating Scale in the prognosis of achievement in regular classes, and consequently demonstrate the utility of these instruments in determining priority of placement of educable mentally handicapped children in special facilities.

Adjustment as Related to Placement:

In the studies of adjustment of EMH Children as related to placement, data on boys and girls were analyzed both separately and combined. Five factors were found to prognosticate good adjustment in either placement. These included: (1) Rural South educational backgrounds, (2) foreign language spoken in the home, (3) good relationship with examiners in the testing situation, (4) good or superior over-all speech ratings, and (5) ratings of adequate on Voice. The first four of these factors occurred significantly more frequently among the regular grade children in the best adjusted group than among the special class children in the middle and low adjustment groups. They also occurred less frequently among the special class pupils in the poorly adjusted group than among the regular class children in the middle and upper adjustment groups. Good relationships with examiners and good ratings in speech and voice also occurred more frequently in the special class best adjusted groups, (Table 25) than in the regular class middle and low groups.

High ratings on the Adjustment Rating Scale and its component parts also characterized both the well-adjusted special class and regular class children. Because of the greater leniency of special class teachers in making adjustment ratings, high adjustment ratings on these scales prognosticated good adjustment in regular classes better than adjustment in special classes. The fact that the Adjustment Rating Scale is subject to frame of reference of teachers appears to strengthen it as a tool for predicting adjustment of educable mentally handicapped children in regular grades. Regular grade children, who despite their handicap on the Adjustment Rating Scale, received median or above median ratings on the Adjustment Rating Scale, on Classroom Work, on Classroom Behavior, on Adjustment to Other Children, Social Participation, and general social adjustment have a very good prognosis for adjustment in the regular grades. This is shown clearly in the illustrative findings in Table 26, which like Table 25, presents representative findings rather than all of the data.

## Table 25

## Factors Associated with Adjustment of EMH Children as Related to Placement in Special Classes and in Regular Grades: Illustrative Findings

| rotective Agency ontact: (Boys) | Special Class Upper Group | Regular Class Upper Group | Totals | $X^2$ | df | Level of Significance |
|---|---|---|---|---|---|---|
| nown to Protective gencies | 5 | 0 | 5 | | | |
| ot Known to Any ocial Agency | 18 | 24 | 42 | | | |
| Totals | 23 | 24 | 47 | Fisher's Exact Test P=.02 | | |
| xaminer Ratings of ome Interest in chool Achievement: Girls) | | | | | | |
| nterest in or pressure or achievement | 19 | 2 | 21 | | | |
| oo little interest in chievement | 9 | 12 | 21 | | | |
| Totals | 28 | 14 | 42 | Fisher's Exact Test P=.001 | | |
| ural South Educational ackground: (Girls) | Special Class Lower Group | Regular Class Lower Group | | | | |
| ith rural South ducational Background | 0 | 6 | 6 | | | |
| ithout rural South r Foreign Language ackgrounds | 19 | 9 | 28 | | | |
| Totals | 19 | 15 | 34 | Fisher's Exact Test P=.004 | | |
| nterest in School chievement: | | | | | | |
| nterest in or Pressure or Achievement | 18 | 3 | 21 | | | |
| oo Little Interest Achievement | 22 | 20 | 42 | | | |
| Totals | 40 | 23 | 63 | 10.11 | 1 | .01 |
| aminer's Rating Home Atmosphere: | | | | | | |
| cellent or Good | 9 | 1 | 10 | | | |
| ir or Poor | 18 | 17 | 35 | | | |
| Totals | 27 | 18 | 45 | Fisher's Exact Test P=.029 | | |

## Table 25

### Factors Associated with Adjustment of EMH Children as Related to Placement in Special Classes and in Regular Grades: Illustrative Findings

| rotective Agency ontact: (Boys) | Special Class Upper Group | Regular Class Upper Group | Totals | $X^2$ | df | Level of Significance |
|---|---|---|---|---|---|---|
| Known to Protective gencies | 5 | 0 | 5 | | | |
| ot Known to Any ocial Agency | 18 | 24 | 42 | | | |
| Totals | 23 | 24 | 47 | Fisher's Exact Test<br>P=.02 | | |
| xaminer Ratings of ome Interest in chool Achievement: Girls) | | | | | | |
| nterest in or pressure or achievement | 19 | 2 | 21 | | | |
| oo little interest in chievement | 9 | 12 | 21 | | | |
| Totals | 28 | 14 | 42 | Fisher's Exact Test<br>P=.001 | | |
| ural South Educational ackground: (Girls) | Special Class Lower Group | Regular Class Lower Group | | | | |
| ith rural South ducational Background | 0 | 6 | 6 | | | |
| ithout rural South r Foreign Language ackgrounds | 19 | 9 | 28 | | | |
| Totals | 19 | 15 | 34 | Fisher's Exact Test<br>P=.004 | | |
| nterest in School chievement: | | | | | | |
| nterest in or Pressure or Achievement | 18 | 3 | 21 | | | |
| oo Little Interest n Achievement | 22 | 20 | 42 | | | |
| Totals | 40 | 23 | 63 | 10.11 | 1 | .01 |
| xaminer's Rating Home Atmosphere: | | | | | | |
| xcellent or Good | 9 | 1 | 10 | | | |
| ir or Poor | 18 | 17 | 35 | | | |
| Totals | 27 | 18 | 45 | Fisher's Exact Test<br>P=.029 | | |

Table 25, Page 2 (continued)

| Rural South Educational Backgrounds: | Special Class Middle and Low Groups | Regular Class Upper Group | Totals | $X^2$ | df | Level of Significance |
|---|---|---|---|---|---|---|
| Rural South Educational Background | 46 | 17 | 63 | | | |
| Without Rural South or Foreign Language Background | 175 | 26 | 201 | | | |
| Totals | 221 | 43 | 264 | 5.95 | 1 | .05 |
| Foreign Language Backgrounds: | | | | | | |
| Foreign Language Backgrounds | 9 | 8 | 17 | | | |
| Without Rural South or Foreign Background | 175 | 26 | 201 | | | |
| Totals | 184 | 34 | 218 | 11.393 | 1 | .001 |
| Relationship with Examiners: | | | | | | |
| Below Median "Negatives" score, indicating good relationship | 100 | 39 | 139 | | | |
| Above Median "Negatives" score, indicating poor relationship | 126 | 12 | 138 | | | |
| Totals | 226 | 51 | 277 | 16.0169 | 1 | .0001 |
| Overall Speech Ratings: | | | | | | |
| Good or Superior | 52 | 22 | 74 | | | |
| Fair | 120 | 17 | 137 | | | |
| Unintelligible or Poor | 55 | 12 | 67 | | | |
| Totals | 227 | 51 | 278 | 9.633 | 2 | .01 |
| Ratings on General Fluency: | | | | | | |
| Adequate | 57 | 27 | 84 | | | |
| Fair | 133 | 18 | 151 | | | |
| Poor | 38 | 6 | 44 | | | |
| Totals | 228 | 51 | 279 | 15.526 | 2 | .001 |

Table 25, Page 3 (continued)

| Birthplace | Special Class Middle and Low Groups | Regular Class Upper Group | Totals | $X^2$ | df | Level of Significance |
|---|---|---|---|---|---|---|
| Chicago | 133 | 19 | 152 | | | |
| Other cities 15,000 + | 35 | 10 | 45 | | | |
| City or town 2,500 to 15,000 | 20 | 3 | 23 | | | |
| Rural | 32 | 14 | 46 | | | |
| Rural, undesignated | 6 | 4 | 10 | | | |
| Totals | 226 | 50 | 276 | 12.076 | 4 | .05 |
| Mothers Supported by A.D.C: | | | | | | |
| Supported by Mothers on A.D.C. | 60 | 5 | 65 | | | |
| Supported by Mothers employed full time | 46 | 16 | 62 | | | |
| Totals | 106 | 21 | 127 | 6.289 | 1 | .05 |
| Mothers Supported by A.D.C: (Boys) | | | | | | |
| Mothers on A.D.C. | 39 | 4 | 43 | | | |
| others employed ays, full time | 27 | 12 | 39 | | | |
| Totals | 66 | 16 | 82 | 4.712 | 1 | .05 |
| nown to Protective gencies: (Boys) | | | | | | |
| nown to Protective gencies | 16 | 0 | 16 | | | |
| ot Known to rotective Agencies | 43 | 24 | 67 | | | |
| Totals | 59 | 24 | 83 | 6.414 | 1 | .05 |

Table 25, Page 4 (continued)

| Enrollment in Highest Transiency Schools: | Special Class Middle and High Group | Regular Class Low Group | Totals | $X^2$ | df | Level of Significance |
|---|---|---|---|---|---|---|
| Enrolled in one of twenty highest transiency schools | 38 | 11 | 49 | | | |
| Not enrolled in one of twenty highest transiency schools | 237 | 22 | 259 | | | |
| Totals | 275 | 33 | 308 | 6.99 | 1 | .01 |
| Homes Without Central Heating Systems in Community Socio-Economic Categories 1,2, and 3 (Girls Only) | | | | | | |
| o central heating ystem in home | 11 | 6 | 17 | | | |
| ome with central eating system | 107 | 16 | 123 | | | |
| Totals | 118 | 22 | 140 | 4.04 | 1 | .05 |
| xaminers' Ratings f Home Atmosphere: | | | | | | |
| xcellent or Good | 32 | 1 | 33 | | | |
| air or Poor | 85 | 17 | 102 | | | |
| Totals | 117 | 18 | 135 | Fisher's Exact Test<br>P=.034 | | |
| atings on Voice (Boys and Girls) | | | | | | |
| dequate | 169 | 13 | 182 | | | |
| ir or Poor | 89 | 20 | 109 | | | |
| Totals | 258 | 33 | 291 | 7.436 | 1 | .01 |
| rls: | | | | | | |
| dequate | 78 | 5 | 83 | | | |
| ir or Poor | 37 | 11 | 48 | | | |
| Totals | 115 | 16 | 131 | 7.424 | 1 | .01 |

Table 25, Page 5 (continued)

| Birthplace of Mothers: (Boys) | Special Class Middle and Low Group | Regular Class Low Group | Totals | $X^2$ | df | Level of Significance |
|---|---|---|---|---|---|---|
| Cities 15,000 + | 55 | 3 | 58 | | | |
| Towns 2,500 to 15,000 | 15 | 5 | 20 | | | |
| Rural | 71 | 7 | 78 | | | |
| Totals | 141 | 15 | 156 | 6.80 | 2 | .05 |
| Relationship with Examiners: | Special Class Upper Group | Regular Class Middle and Low Group | | | | |
| Above Median "Negative" score, indicating poor relationship | 25 | 91 | 116 | | | |
| Below Median "Negatives" score, indicating good relationship | 58 | 59 | 117 | | | |
| Totals | 83 | 150 | 233 | 18.74 | 1 | .0001 |
| Voice Ratings: | | | | | | |
| Adequate | 58 | 71 | 129 | | | |
| Fair or Poor | 22 | 80 | 102 | | | |
| Totals | 80 | 151 | 231 | 7.481 | 1 | .01 |
| Over-all Speech Ratings: | | | | | | |
| Boys: | | | | | | |
| Good or Superior | 22 | 12 | 34 | | | |
| Fair | 21 | 48 | 69 | | | |
| Unintelligible or Poor | 13 | 19 | 32 | | | |
| Totals | 56 | 79 | 135 | 11.032 | 2 | .01 |
| rls: | | | | | | |
| Good or Superior | 12 | 42 | 54 | | | |
| Fair | 19 | 27 | 46 | | | |
| Unintelligible or Poor | 5 | 4 | 9 | | | |
| Totals | 36 | 73 | 109 | 6.339 | 2 | .05 |

Table 25, Page 6 (continued)

| Home Without Central Heating Systems, Community Socio-Economic Categories 1, 2, and 3 only: (Girls) | Special Class Upper Group | Regular Class Middle and Low Group | Totals | $X^2$ | df | Levels of Significance |
|---|---|---|---|---|---|---|
| Homes without central heating systems | 1 | 15 | 16 | | | |
| Homes with central heating systems | 33 | 67 | 100 | | | |
| Totals | 34 | 82 | 116 | Fisher's Exact Test= .02 | | |
| Examiner Ratings of Home Atmosphere: | | | | | | |
| Excellent or Good | 11 | 5 | 16 | | | |
| Fair or Poor | 14 | 37 | 51 | | | |
| Totals | 25 | 42 | 67 | 7.684 | 1 | .01 |

| Ethical Comprehension Test Standard Scores: | Special Class Low Group | Regular Class Middle and High Group | | | | |
|---|---|---|---|---|---|---|
| Standard Score 56 or above | 3 | 44 | 47 | | | |
| Standard Score 44 or below | 11 | 30 | 41 | | | |
| Totals | 14 | 74 | 88 | 5.399 | 1 | .05 |
| Relationship with Examiners: | | | | | | |
| Good relationship with examiners, as indicated by low "Negatives" score | 14 | 92 | 106 | | | |
| Poor relationship with examiners, as indicated by high "Negatives" score | 30 | 77 | 107 | | | |
| Totals | 44 | 169 | 213 | 6.2[illegible] | 1 | .05 |

## Table 26

### Adjustment Ratings of Special Class and Regular Class EMH Children as Related to Criterion Adjustment Groups: Illustrative Findings

| Adjustment Rating Scale Scores: (Boy & Girls) | Special Class Middle & Low Groups | Regular Grade High Group | Totals | df | $X^2$ | Level of Significance |
|---|---|---|---|---|---|---|
| Median or Above Median | 100 | 37 | 137 | | | |
| Below Median | 123 | 14 | 137 | | | |
| Totals | 223 | 51 | 274 | 1 | 11.661 | .001 |
| Ratings of Overall Classroom Work (Boys & Girls) | | | | | | |
| 3 or above | 131 | 40 | 171 | | | |
| 2 or below | 92 | 11 | 103 | | | |
| Totals | 223 | 51 | 274 | 1 | 6.044 | .05 |
| Social Adjustment Rating (Boys & Girls) | Special Class Middle & High Group | Regular Grade Low Group | | | | |
| Median or Above Median | 139 | 7 | 146 | | | |
| Below Median | 121 | 26 | 147 | | | |
| Totals | 260 | 33 | 293 | 1 | 10.926 | .001 |
| Ratings of Overall Classroom Work (Boys and Girls) | | | | | | |
| 3 or above | 174 | 11 | 185 | | | |
| 2 or below | 86 | 22 | 108 | | | |
| Totals | 260 | 33 | 293 | 1 | 12.79 | .001 |

Rural birthplaces were associated with good adjustment in regular grades for both boys and girls. Home interest in school achievement was associated with good adjustment in regular classes for boys, and ratings of excellent or good on Home Atmosphere were associated with good adjustment in regular classrooms for girls.

A number of factors were associated with poor adjustment in regular classrooms and with better adjustment in special classes than in regular classes. These factors appear to have an underlying similarity in that all were adverse social or family conditions, or were suggestive of multiple handicap. They included: for boys, (1) having mothers supported by Aid to Dependent Children, (2) being known to Protective Agencies, and (3) having poor over-all ratings on speech; For girls, factors associated with better adjustment in special classes than in regular classes were: (1) living in communities of low economic status in homes without central heating system, (2) ratings of Fair or Poor on Home Atmosphere, (3) ratings of Poor on General Fluency and Intelligibility, and (4) ratings of Fair or Poor on Voice.

Compared with children whose mothers were employed days full time, EMH children with mothers on ADC had poor prognosis for adjustment in regular grades. Children known to protective social agencies also appear to have a low probability of being in the well-adjusted group in regular classes. No children known to protective agencies were found in the regular grade well-adjusted group.

Ratings of Fair or Poor on Home Atmosphere, as compared with ratings of Excellent or Good, were associated with poor adjustment in regular grade placement. Girls whose home atmospheres were rated Fair or Poor were predominantly in the regular grade middle and low adjustment groups, while more than half of the special class girls in the high adjustment group received Home Atmosphere ratings of Fair or Poor. Thus, girls whose home atmospheres were rated Fair or Poor appeared from our data to have a fairly good prognosis for adjustment in special classes as compared to adjustment in regular classes.

Enrollment in one of the twenty highest transiency schools prognosticated poor adjustment for EMH children in regular classes, since one-third of the children in the regular class poorly adjusted group were enrolled in the twenty highest transiency schools.

Boys whose mothers were born in towns of 2,500 to 15,000 were over-represented in the regular class poorly adjusted group. Girls with rural South or foreign language backgrounds were not found at all in the poorly adjusted group in special classes. This indicated that girls with rural South or foreign language backgrounds have an even better prognosis for adjustment in special classes than in the regular grades.

Four factors prognosticated poor adjustment in special classes. These were: low scores on the Ethical Comprehension Test in relation to chronological age and IQ, poor relationships with examiners in test situations, and, for girls, poor over-all ratings in speech and lack of central heating systems in their homes. EMH children with high scores on the Ethical Comprehension Test for their chronological age and IQ levels rarely made poor adjustments in special classes, while below average standard scores on the Ethical Comprehension test tended to characterize those EMH children making poor adjustments in special classes. Another factor which seemed to characterize the EMH children making poor adjustment in special classes was poor relationship with examiners in the test situation. Girls receiving ratings of Poor or Unintelligible on Over-all Speech also tended to make poor adjustment in special classes. Girls from homes without central heating systems seemed to have a poor prognosis for adjustment in either special classes or regular grades, although their chances for adjustment in special classes was better than in regular classes.

Girls who received ratings of Excellent or Good on Home Atmosphere made poor adjustments in special classes relatively more often than in regular grades.

## A Comparison of Special Class and Regular Class Children making Most and Least Progress in Paragraph Meaning

A second study was carried out to identify differences among special class children making most and least progress in the Paragraph Meaning Test of the Stanford Achievement Battery during a one-year interval and of the regular class EMH children making least and most progress in Paragraph Meaning during a one-year interval. The sixteen per cent, or twenty-two pupils, of each group making most progress within one-year were compared with the sixteen per cent making the least progress during this period. Comparisons were made on fourteen factors. Within the special class group, the sixteen per cent making the most progress was differentiated from the same proportion making the least progress by greater frequency of children with rural South educational backgrounds in the rapid progress group. The rapid progress group in reading also made the more rapid progress in arithmetic. Among the regular class EMH children, the pupils making the most progress in Paragraph Meaning differed from those making the least progress in having a greater proportion of cases with the validity of their IQ's questioned. The children making the least progress in Paragraph Meaning during the year also received significantly higher proportions of categorizations of Passive or Passive-Aggressive on the Behavior Checklist.

### Classroom and School Factors as Related to Progress in Special Class and Regular Class Placement

Data on classroom and school factors were recorded for factors such as: school size, school transiency, class size, class homogeneity, availability of tutoring service, and degrees of participation of special classrooms in the over-all school program. Examiners maintained checklists on physical attributes of rooms, emotional climate of classrooms, evidence of teacher planning, evidence of effectiveness of control, and teacher-pupil interaction. Ratings were made of teacher effectiveness, physical attributes of rooms, classroom atmosphere, and teachers' understanding of the child studied. These observations and ratings were made at the time of testing.

In many instances reliable data on classroom and school factors were unobtainable, and often judgments required of an examiner could not be made with confidence. Further, since ratings were made and observations recorded at times examiners worked with a child, and were usually made only at the beginning and end of the test-retest interval, evidence was lacking with respect to representativeness of the data in reflecting conditions prevailing during the entire test-retest interval. This was especially so for children who changed teachers, rooms,or schools several times between testing and retesting. More confidence can probably be placed in the objective data from classroom and school data sheets than in the judgmental data.

Only one of the classroom and school factors differentiated between the regular class children making rapid progress and those making the slowest progress in achievement. Three factors discriminated between the special class children in the rapid progress group and the special class children in the slow progress group. All of these factors were related to school transiency, and,surprisingly, relationships to all of these factors appeared to be in a direction opposite to what might have been expected. The regular class children of the top quartile schools on average class size made better progress than the regular class children not in the top quartile schools on average class size. Similarly, for special class children, it was the pupils in the schools with higher pupil turnover and more overageness, and the children in the larger schools who made the better academic progress. The importance of taking biasing factors into consideration was clearly demonstrated in these instances, when school transiency was related to history of school experience in rural South and to questioned validity of IQ's. When this was done, it was found that the children with educational backgrounds in the rural South were enrolled prodominantly in the high transiency schools. Thus, it appeared as if the factor of underestimation of the IQ's of the rural South children had such a great influence upon achievement that it was able to counteract the effect of high transiency.

A number of observer ratings of classroom conditions were associated with the adjustment of educable mentally handicapped children in regular classes. These included Ratings of Room, Classroom Atmosphere, Teacher Understanding of Child, and Effective Teaching. High ratings of the room, of Classroom Atmosphere, of Teacher Understanding of the Child, and of Effective Classroom Control were associated with the better adjusted EMH children in regular classes. Children who regular teachers thought were not at a disadvantage in placement tended to be in the well-adjusted group, while those who teachers believed were misfits tended to be in the poorly adjusted group. The better adjusted regular grade children also tended to be in schools of enrollment of below 1400.

Only one school factor appeared to be related to the adjustment of special class EMH children. This was size of school. The special class EMH children in the smaller schools tended to be better adjusted than those in the larger schools. Thus, whereas for the group as a whole, size of school appeared to be associated with good achievement, the relationship seemed to be reversed for adjustment, since good adjustment for both special class and regular class EMH children appeared to be associated with enrollment in the smaller schools.

In a final check on possible sources of bias, the 140 children in the special class group were compared with the 140 matched children in the regular class group on a number of classroom and school conditions. These conditions included the following factors: (1) number of changes of teacher during one year, (2) number of changes of schools during the test-retest year, (3) sex of teacher, (4) status of teacher, i.e.; whether assigned or substitute, and (5) class enrollment. The size of the classrooms in which the regular grade children were enrolled was, of course, significantly larger than those of the special class children. The regular class children had more teachers and more changes of schools during the test-retest interval than the special class children. These differences were statistically significant. Of the pupils in classrooms with assigned teachers, a significantly larger proportion of special class children were taught by assigned male teachers. Overall, however, the difference between the two groups in the number of male and female teachers during the test-retest interval was not statistically significant.

A greater proportion of the special class children were taught by substitutes. This difference approached significance, but did not reach statistical significance at the 5 per cent level. More special class pupils having substitutes of the same sex at test and retest had women substitutes, while a greater proportion of regular class children having substitute teachers of the same sex at the time of both the test and the retest were taught by men substitute teachers.

## Summary

The studies reported in this chapter were carried out to determine under what circumstances educable mentally handicapped children made better progress in special classes and under what conditions they made better progress in regular grades. The criterion groups of special class and regular class children who made the most and least academic progress during one-year periods, as described in Chapter 3, were used in studies of factors associated with rapid and slow academic progress as related to placement. The criterion groups of children who were well-adjusted or poorly-adjusted both at time of test and of retest, according to agreement of teachers and examiners, as described in Chapter 4, were used in the studies of factors associated with good and poor adjustment as related to placement. The studies of achievement as related to placement showed a greater proportion of children in the special class rapid progress group than in the regular class rapid progress group having such adverse conditions in their backgrounds as over-crowded homes and family instability, and a greater proportion of the children in the regular class slow progress group than of the special class slow progress group receiving categorizations of passive and passive-aggressive on Behavior Checklists. Children with below median scores on the Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children also appeared to have a better chance for good academic progress in special classes than in regular grades. Pupils making slow progress in regular classrooms were characterized by below median scores on Adjustment Rating Scales and on the Motivation Scale of the Behavior Checklist and by above median scores on the Passive Scale of the Behavior Checklist. Our findings thus indicated that educable mentally handicapped children with unfavorable conditions in their backgrounds, such as overcrowding and family instability and children characterized as Passive or Passive-Aggressive on the teacher's Behavior Checklist have a relatively good chance of making adequate progress in special classes, while they have only a fair or poor chance of making good academic progress in regular grades. Our findings also indicated the usefulness of the Behavior Checklist and of the Adjustment Rating Scale in prognosticating achievement in regular classrooms, and consequently demonstrated the usefulness of these instruments in determining priorities of placement of educable mentally handicapped children in special facilities.

Our studies of adjustment as related to placement revealed five factors which prognosticated good adjustment in either placement. These included rural South educational backgrounds, foreign language spoken in the homes, good relationships with examiners in testing situations, good or superior Over-all Speech ratings, and ratings of adequate on Voice. Rural birthplaces were associated with good adjustment in regular grades for both boys and girls. Home interest in school achievement was associated with good adjustment in regular classes for boys and ratings of excellent or good on home atmosphere were associated with good adjustment in regular classes for girls. The factors which were associated with poor adjustment in regular class placement appeared to have a similarity in that all were adverse social or family factors or were suggestive of multiple handicap. These included, for boys, having mothers on ADC, being known to Protective Social Agencies, and having poor over-all ratings on Speech. For girls, factors prognosticating poor adjustment in regular class placement included living in homes without central heating systems, having ratings of Fair or Poor on Home Atmosphere, and having Poor ratings on General Fluency and Intelligibility of Speech. Our data showed boys whose mothers were supported by ADC to have a better chance for good adjustment in special classes than in regular classes, and children known to protective social agencies to have a better chance for adjustment in special classes than in regular grades. Girls whose home atmospheres were rated as Fair or Poor were predominantly in the regular grade middle and low adjustment groups, while their chances for adjustment in special classes were relatively good. Although girls with rural South and foreign language backgrounds had good chances for adjustment at either placement, their chances for successful adjustment in special classes was even better than in regular classes.

The factors prognosticating poor adjustment in special class placement included low scores on the Ethical Comprehension Test in relation to chronological age and IQ, poor relationships with examiners, and for girls, Poor Over-all Speech ratings and absence of central heating systems in their homes.

The Chicago Adjustment Rating Scales were shown to be useful in predicting adjustment in regular class placement.

Our studies of classroom and school factors as related to rapid and slow progress in special classes and in regular grades were handicapped by insufficient opportunities for systematic observations. Observations were made only at the beginning and end of the test-retest interval. Conditions observed on these two dates therefore may have been unrepresentative of conditions prevailing during the major part of the test-retest year. There were numerous changes of schools and of teachers, and it was impossible to determine the length of time that conditions observed on the dates of testing had prevailed. In many instances examiners either did not have an opportunity to observe classroom or school factors that they were asked to record, or they lacked confidence in the observations recorded. A number of ratings of teacher and classroom made by examiners were found to be significantly related to the adjustment of EMH children. Favorable ratings of teacher effectiveness, classroom atmosphere, physical conditions of rooms, and adequacy of teacher control were associated with good adjustment of EMH children in regular classrooms. For the group as a whole, size of school appeared to be associated with good achievement, although this relationship was biased by the presence of a disproportionate number of children with rural South educational backgrounds in the larger schools and in the schools with higher transiency. Adjustment of the EMH children appeared to be related to enrollment in the smaller schools, however.

The regular class children had more teachers and more changes of schools during the test-retest interval than the special class children. A greater proportion of the special class children was taught by substitutes, although this difference did not reach statistical significance.

# Chapter 8

## Summary and Discussion

### Purpose of the Experiment

The major purpose of the matched pair experiment was to compare the effectiveness of instruction of educable mentally handicapped children in special classes and in regular grades on both academic and adjustment criteria. A subsidiary objective was to determine under what circumstances EMH children make better progress in special classes and under what circumstances they make better progress in regular classes.

To clarify problems of interpretation of findings and to check upon possible sources of bias, studies of correlates of achievement, correlates of adjustment, selective factors in placement, and factors associated with satisfactory and unsatisfactory progress in special classes and in regular grades were carried out.

### Controls in the Matching Process

The variables to be controlled were selected on the basis of a pilot study. Educable mentally handicapped children in special classes were matched with EMH children in regular classes on the following factors:

(1) Age,

(2) I.Q.,

(3) Sex,

(4) Community socio-economic ratings,

(5) Reading achievement,

(6) Location of previous school attendance,

(7) Foreign language spoken in the home,

(8) Adjustment appraisal, based upon agreement of ratings of teachers and staff examiners,

(9) Presence or absence of a record of brain injury in case reports.

Subjects

Six hundred eighty-one children were tested in the Cooperative Research Project Matched Pair Experiment. Five hundred sixty-two were retested at a one-year interval. The study was limited to EMH children of the fifty through seventy-four IQ range. The entire sample was used in some of the studies made. Tests of the major hypothesis were based upon one hundred-forty matched pairs tested and retested at a one-year interval and upon sixty-four pairs tested at a two-year interval.

Measurement of Progress

A comprehensive evaluation program was carried out which included evaluation of progress both toward the academic objectives of the curriculum and toward behavioral and attitudinal outcomes.

In addition to the standardized achievement tests, the Stanford Reading and Arithmetic tests and the Metropolitan Reading Readiness Test, measurement instruments were developed by the project staff to solve evaluation problems not already met by available instruments. Academic evaluation measures developed included tests of general information and general comprehension, ethical comprehension, practical reading, and word recognition. Rating instruments for use of teachers included adjustment rating scales and behavior check lists. Tools for the recording of examiners' observations and clinical judgments included observation checklists, personality categorization forms, and speech observation checklists. A method for analysis of picture study productions was refined. Other measures of attitude or personality attributes devised included a sociometric interview questionnaire and an interest maturity test. The construction, validation, and reliability of a number of these evaluation instruments have been reported in separate papers.

Correlates of Achievement

Three studies, utilizing multiple criteria of achievement, were carried out in which the backgrounds of achieving and non-achieving educable mentally handicapped children were compared. These studies yielded the following composite picture of the social and psychological characteristics of the achieving EMH child, as distinguished from the non-achieving EMH child:

### 1. Validity of Diagnosis.

The achieving EMH child tended to be one whose diagnosis as educable mentally handicapped was questionable. The validity of the IQ's of the children in this group tended to be questioned by examining psychologists or Cooperative Research Project staff examiners. A disproportionate number of these children had Rural South educational backgrounds, which probably handicapped them in taking psychological examinations fairly soon after arriving from the Rural South. They also received higher scores on the Chicago Test of General Information and General Comprehension and on the Cooperative Research Project Ethical Comprehension Test for their tested levels of mental ability than the non-achievers.

### 2. Family Stability.

The achieving EMH children tended to come from relatively stable homes, as compared with other EMH children. Fewer of the families of achieving EMH children had contact with social agencies, and, in particular, with public assistance agencies. Their school attendance tended to be good.

### 3. Personality Ratings and evidence of Personality Integration.

The achieving EMH child tended to receive relatively high adjustment ratings from his teachers and relatively high scores on the Aggressive, Well-Adjusted, Reponsibility, and Motivation scales of the Behavior Checklist, a teacher-report instrument. They tended to receive low Passive scores on this same instrument. Examiners rated this group as generally well adjusted, and as a group gave them adequate ratings on motivation. As a group, the achievers tended to be free of psychiatric defects and of medically diagnosed speech defects, at least as recorded in their records.

### 4. Socio-economic status.

As a group, the achievers, though like the non-achievers in being generally of low socio-economic status and in residing generally in areas of low socio-economic status, were nevertheless distinguishable from the poor achievers by relatively smaller frequencies of public assistance and of residence in public housing.

## Characteristics of the Persistently Non-Achieving EMH Child.

Our data gave the following composite picture of the social and psychological characteristics of the persistently non-achieving EMH child. In contrast to the achievers, the poorly achieving EMH children tended to be local born, tended not to have the validity of their IQ's questioned, and received relatively low Ethical Comprehension test scores for their mental age. A greater proportion was known to social agencies, and a greater number were supported by public assistance. There was more family instability in the non-achieving group than in the achieving group. As a group, the attendance of the non-achievers was poor. They received lower adjustment ratings from their teachers, lower ratings on motivation and responsibility, and higher ratings on passivity on the teacher's behavior checklist than the achieving group. Examiners recognized them as more poorly adjusted and poorly motivated, and considered their families as generally lacking in interest in their academic progress. The non-achievers received relatively higher scores on abnormality and ineffective thinking scales derived from projective personality test analyses than the achieving group. Diagnosed cases with psychiatric, speech, and neurological defects, though infrequent in our records, occurred more often in the persistent non-achieving group.

## Correlates of Adjustment.

A study was made of the social, educational, and psychological backgrounds of well adjusted and poorly adjusted EMH boys and girls. Inclusion in the extreme adjustment groups required independent agreement of teacher and staff examiner that a pupil was well adjusted both at the time of the first test and at the time of the retest, or that he was either poorly adjusted at both test or retest or that he had regressed in adjustment.

Our data indicated the following general differences in the backgrounds and characteristics of the well adjusted and poorly adjusted EMH children: The poorly adjusted EMH boy tends to have been a city dweller for his entire school career. He has been diagnosed, tested, observed, and found to be a bonafide mentally handicapped child in performance, if not in potentiality. Socio-economically, he ranks lowest within the lowest socio-economic categories. He comes from a deprived home which has little interest in schooling. There is a fifty-fifty chance that he is known to a social agency. He may have severe emotional problems and at least a mild speech defect. He is likely to be a non-achiever.

The poorly adjusted EMH girl is likely to be more acutely disturbed emotionally than the EMH boy. Situational factors such as broken homes, inadequate living conditions, and unstable neighborhood conditions may affect the overt behavior problems she presents. Like the poorly adjusted EMH boy, she tends to be indigenous to the city. She may have at least a mild speech problem. Her family shows relatively little interest in education. Like the poorly adjusted EMH boy, she tends to be a non-achiever.

The well adjusted EMH child is likely to be rural or foreign born. He cooperates in a testing situation. He is relatively free of serious speech problems or of psychiatric defects. His parents attempt to be self-supporting. They show an interest in his getting an education. Schools get a favorable impression of his home atmosphere. His principals and teachers do not consider him urgently in need of special class placement.

Selective Factors in Placement.

Children placed at early ages were found to differ significantly from children placed at later ages on three important correlates of achievement or adjustment. These variables were Rural South educational backgrounds, chronological age, and community socio-economic status. These three factors, in turn, were interrelated; Rural South children tended to be older than the native born EMH children, and in the main they lived in the lower socio-economic community areas. It was thus apparent that direct comparisons of the progress of early placed and late placed children would be biased by selective factors. Therefore, a test of hypothesis 1a, as originally proposed, was not made from our data.

A study of selective factors operating during the course of the experiment showed that the validities of the IQ's of a disproportionate number of children remaining unplaced at the end of the experiment had been questioned at the time of initial testing by the project staff. A significantly greater proportion of children remaining in regular grades throughout the course of the experiment were described by local school administrators at the time of the first testing as not urgently in need of placement. Low socio-economic status and correlates of deprivation such as inadequate housing, contact with social agencies, extreme overcrowding, and family instability were associated with relatively rapid placement during the course of the experiment.

It may be concluded from these studies of selective factors in placement that the children who were placed during the course of the experiment, as a group, tended to be children who were more in need of placement than the children who remained unplaced. It may therefore be presumed that selective factors in placement may influence comparisons of progress of special class and regular class EMH groups.

Progress of Special Class and Regular Class Groups.

For the entire sample of children with mental ages of 6.0 and above who were retested at a one-year interval, the median gain in both Reading and Arithmetic was less than .5 year. More than 25 per cent of this sample gained less than .2 year, while the upper quarter of the sample gained almost .9 year in Reading and more than .7 year in Arithmetic. Thus, the EMH sample as a whole gained less than might be expected of their IQ; a full quarter of the sample made little or no academic gains during a one-year period, while more than another quarter exceeded theoretical expectancy.

On measures of achievement, the regular class group made a significantly larger gain in Arithmetic over a one-year period than the special class group. No other significant differences between the two groups in academic progress over a one-year period were found. None of the two-year differences between the two groups on academic measures were significant, although the regular class group had an advantage in Reading which approached significance.

The regular grade group made a higher gain in ratings of overall classroom work over a two-year period. One scale score and one overall adjustment measure from the projective test analysis favored the regular grade group for the one-year interval. Over a two-year interval, the special class group showed a significantly greater decrease on a hostility scale, and advantages approaching significance on two other scales.

An advantage at the 10 per cent level on a sociometric instrument in favor of the special class group, along with the two-year differences on the projective test scales, tended to support the hypothesis that, in general, special classroom placement has a salutary effect upon the emotional adjustment of EMH children. These conclusions must be considered tentative until more research is done to demonstrate the validity of the projective test scales.

Investigations of possible sources of bias indicated that the two groups were well matched on many relevant factors: They were similar in tested IQ, in gross measures of socio-economic status, in Rural South educational backgrounds, and in initial achievement in reading and arithmetic. Controls over the test-retest interval were very close. The two groups were similar in overt adjustment,as reflected in categorizations of teachers and examiners. The groups were also similar in performance on the Bender-Gestalt test.

There was evidence of a selective factor operating in the direction of underestimation of the true intelligence of a greater number of children in the regular class group. This bias was reflected in the higher initial scores on The Chicago Test of General Information and General Comprehension made by the regular grade group. Analysis of the progress of the two groups by two levels of IQ and two levels of Reading achievement gave further evidence of greater underestimation of the IQ's of the regular grade group, as compared with the special class group. The children of low IQ's, but with relatively good reading ability who remained in regular grades apparently accounted for the superiority of the graded group in arithmetic. These data support the hypothesis that where special class placement is available, educable mentally handicapped children who remain in regular classes are as a group actually higher in true intelligence than indicated by their past record of performance on mental tests. This is an important source of bias which must be taken into consideration in interpreting comparisons of progress of EMH children in special classes with those in regular grades.

### Progress as Related to Placement

Children with adverse social factors in their backgrounds, such as family instability and over-crowding, and children characterized as passive or passive-aggressive appear to have a better prognosis for making adequate academic progress in special classes than in regular classes. These same children also appear to have a better chance of making an adequate personal adjustment in special classes than they do in regular classes. A number of factors prognosticated good adjustment either in special classes or in regular classes. These included Rural South educational backgrounds, foreign language spoken in the home, good relationships with examiners in testing situations, good or superior overall speech ratings, and ratings of adequate on voice.

Other factors were associated with poor adjustment in regular classrooms and with better adjustment in special classes. These factors seemed to be similar in that all were either adverse social or family conditions, or were suggestive of multiple handicap. They included, for boys, having mothers supported by ADC, being known to protective social agencies, and having received poor overall ratings speech. For girls, the factors associated with poor adjustment in regular classes included living in homes without central heating systems, receiving ratings of poor or fair on home atmosphere, and receiving poor ratings on general fluency and intelligibility of speech. Girls with Rural South or foreign language backgrounds had an even better prognosis for adjustment in special classes than in regular grades; no girls with Rural South or foreign language backgrounds were found in the poorly adjusted group in special classes.

Low scores on ethical comprehension tests and poor relationships with examiners in test situations prognosticated poor adjustment in special classes. For girls, poor overall ratings on speech were associated with poor adjustment in special classes.

High ratings on the Adjustment Rating Scale and its component parts characterized both the well adjusted special class and regular class groups. Although special class teachers were shown to have a tendency to be more lenient in making adjustment ratings and in noting marginal behavior problems, both the Adjustment Rating Scale and Behavior Checklist were shown to be useful, economical instruments for predicting achievement and adjustment of EMH children in regular classes. Low scores on the Adjustment Rating Scale and on Overall Classroom Work and below median scores on the Motivation Scale of the Behavior Checklist prognosticated poor achievement of educable mentally handicapped children in regular classes. On the other hand, EMH children receiving median or above ratings on the Adjustment Rating Scale, on Overall Classroom Work, on Classroom Behavior, on Adjustment to Other Children, Social Participation, and general social adjustment, have a good prognosis for adjustment in regular grades.

Classroom and School Factors Associated with Achievement and Adjustment.

Several ratings of teacher effectiveness made by examiners were found related to the adjustment of EMH children in regular classes. These included overall ratings of teacher effectiveness, ratings of classroom atmosphere, ratings of physical conditions in classrooms, and judgments of the adequacy of the teacher's control. Favorable ratings on these factors were associated with ratings of good adjustment on the part of EMH children in regular classrooms. However, caution must be used in interpreting data based on brief classroom observations at the time of yearly tests and retests. A more specific study of classroom and school factors, based on a systematic schedule of observations, would be necessary to obtain definitive evidence with respect to the effect of such factors on the achievement and adjustment of EMH children.

The regular class children had, on the average, more changes of teachers and more changes of schools during the test-retest interval than the special class children. The more rapid change of teachers for the regular grade groups probably reflects the semester promotion system in the grades, as contrasted with the

**longer stay of pupils in an EMH ungraded room. The more rapid change of schools, however, suggests that there was more family mobility among the ungraded group.**

## Interpretation of Findings.

omit

**Our findings in a comparison of the progress of educable mentally handicapped children in special classes with those in regular grades differ from findings of other studies. Other studies, for example, Elenbogan (1957), Cassidy and Stanton (1959), and Thurstone (1959), found clear advantages with respect to academic progress for regular grade groups, while our findings indicated that even the single advantage found in favor of the regular grade group in arithmetic was probably influenced by selective factors in placement and underestimation of the IQ of the regular grade group. These differences between the findings of different researchers may be accounted for by the greater degree of control in the present experiment.**

**Although bias in the comparison of the progress of special class and regular class groups was decreased in the present experiment, selective factors determining placement remained and influenced the comparisons made. Apparently the IQ's and therefore the mental ages of the regular class group were more frequently underestimated than were those of the special class group. In making comparisons of progress of educable mentally handicapped children under different conditions of instruction, it is clear that the level of educability of the groups needs to be taken into consideration. Our studies of correlates of achievement now indicate that control for degree of educability is not equivalent to control of tested mental age. Factors associated with underestimate of mental age include cultural attitudes, such as family educational aspirational level and manifest interest in schooling; they include socio-economic variables, motivation, and personality integration.**

Our findings that the special class children receive significantly higher ratings on the Adjustment Rating Scale and on the Well Adjusted scale of the Behavior Checklist than their matches in regular classes needs interpretation in view of the experience of administrators and teachers that where there is an extensive waiting list for special class placement, the children presenting to the regular class and the regular school the most serious problems in behavior and adjustment tend to be transferred to a special class in preference to the more placid children. How does it happen, then, that a group of children in the special classes, many of whose members were known to be selected when in the regular grades as being maladjusted, appear in a special class to be on the average better adjusted than those left behind?

Three hypotheses, two of which are difficult or impossible to check from existing data, suggest themselves. First, the children placed in special classes are somehow innately "better" children than the children of similar mental ability remaining in regular grades. This being contradicted by known transfer procedures, leaves only two hypotheses. Second, the frame of reference of the teacher in a special class (and to a lesser extent the examiner's frame of reference) is inherently different from that of the teacher in the regular grade. The special teacher rates the child in comparison with his expectations of children in a special group, and in comparison with similar children with whom he has been working, perhaps not merely this year, but for many years. The special teacher may be accepting of behavior and personality traits the regular teacher would consider evidence of maladjustment. Further, in a class of thirty-five, the impact of certain types of behavior deviation from classroom norms is much greater than in a class of fifteen. According to this "frame of refernce" hypothesis, then, the adjustment of the child in a special division might actually be poorer than that of a child in a regular grade, but be perceived and rated by the teacher concerned as better.

Third, there may be actual improvement in the child's adjustment and in the picture his personality presents to the most unbiased observer as a result of placement in a special class. The child may have found release from pressures of impossible academic achievement inherent in his perception of the activities of his classmates even if the regular teacher sets lowered goals for him. The teacher with fifteen pupils can more effectively establish rapport and convince the deviate child that his good qualities are honestly admired than can the teacher with a class of thirty-five. A special class teacher has special training in understanding this type of child and has selected and sought this type of teaching assignment because of an interest in its problems and challenges.

With no criticism of the teacher in the regular grades, it would be difficult not to hypothesize that the special teacher will display on the average a greater acceptance of the handicapped child's level of function and a greater satisfaction in his progress, however, slow, than the regular class teacher. Educators tend to believe that such acceptance and such teacher satisfaction will be reflected in improved adjustment of the pupil. On the basis of this third hypothesis, then, we might assume that the child who presents adjustment problems in the regular grades shows a different and better pattern of behavior and adjustment in the special class, not because he is a child who possesses fundamentally stronger adjustive capacities, but because the special class is better adapted to his needs.

A comprehensive study of the value of special classes should include inquiry into the effect on his normal classmates of the greater homogeneity of grouping which results from the removal of the retarded child with his special demands upon the teacher's time and energy. Does the presence of mentally handicapped children interfere with the learning of their non-handicapped peers? This may depend upon the disparity between their learning ability and that of average of their classmates, upon the number of educable mentally handicapped children in regular classrooms, upon the heterogeneity of the classrooms in which they are enrolled, upon their own personalities, and upon the dynamics of the social relationships within the classroom group. Though pertinent to the overall evaluation of a special education program for educable mentally handicapped children, the investigation of this problem was beyond the scope of the present research project.

# Chapter 9

## Implications

### Implications for Diagnosis of Mental Retardation

1. Individual psychological evaluations still underestimate the potentials of a substantial number of children with cultural handicaps, even when carried out by well-trained and experienced school psychologists alert to the factors producing "pseudo-mental-deficiency." Psychologists must be particularly careful in evaluating the potentials of children who have attended school in the rural South, children with foreign language backgrounds, and children whose environment may have failed to stimulate them to optimal intellectual development. Many such children made progress during the two years of observation in the experiment at rates considerably above the expectancy for their measured IQ.

2. When a school refers a child for psychological examination with a view to determining his eligibility for placement in a special class, detailed information on the child's personality, adjustment, and background is as essential as data on his educational progress.

3. The Adjustment Rating Scale and the Behavior Checklist developed in the current research, which can be quickly filled in by the teacher, could be useful screening devices to be used prior to referral. With such objective screening criteria available, priorities in the use of a psychologist's time could be based not only on the needs within a local school, but on the overall needs of a district. Scoring of the screening measures should be done at the district level by a senior school psychologist, who could then advise the district superintendent on the relative urgency of the needs of the various schools.

4. Periodic re-evaluation of all children designated as "educable mentally handicapped" is mandatory. It is especially important for pupils who have rural South educational backgrounds, foreign language backgrounds, or other evidence of educational deprivation in their histories. Flexibility in re-evaluation

might be increased by the use of brief individual screening measures, such as the Chicago Test of General Information and General Comprehension. This instrument might be employed to determine whether complete diagnostic examinations are necessary.

Implications for Retention of EMH Children in Regular Grades

5. Well adjusted EMH children, and particularly those well-adjusted EMH children who have recently come to the city from a rural Southern environment, or who have foreign language environments, may well be retained in regular grades even with measured IQ's considerably below 75.

6. Other children diagnosed as being of EMH potential (a majority of the total group) do not achieve at their expected rate when retained in regular grades. On the average, the EMH pupils of this study made .5 of a year of academic gain when their measured potential suggested that they might in an optimal educational program, have made .7 of a year gain.

Implications for the Special Class Program for the Mentally Retarded

7. Special class placement has been demonstrated to be superior to regular class placement for the more severely handicapped, those with emotional problems added to the mental handicap, and those from homes marked by overcrowding, family instability, support by Aid to Dependent Children, and contact with protective social agencies.

8. The program in the special classes needs searching study and improvement. In curriculum, methods, supervision, and teacher training, gains must be made. Although the pupils remaining in regular grades did not on the average make progress at their expected rate, the average pupil in the average special class did no better. In neither placement were average achievements consistent with measured potential.

Implications for Organization of Instruction

9. The extreme variations found among educable mentally handicapped children have important implications for the organization of instruction for such children. It would appear worthwhile to experiment with special facilities for the persistently non-achieving educable mentally handicapped child whose multiple handicaps have been pointed out. Another experiment might organize special facilities for the pseudo-retarded child whose mental ability may have been underestimated by psychological examinations, particularly those whose rate of progress approaches or exceeds theoretical expectancy, and who give the appearance of adequate adjustment. In these rapid track classrooms, memberships as high as 25 may be defensible. Pupils will be the high achieving EMH children whose measured IQ's are questioned and who are well motivated and well adjusted. Many of these could soon be returned to regular grades.

10. Such a variety of EMH tracks would require a regular testing program in the special divisions employing comparable tests throughout a school system. This would provide teachers with a uniform measure of progress and would serve to motivate instruction. On the basis of test results and teacher judgment, pupils should be promptly transferred from one type of classroom to another, according to their needs and apparent potential for rapid or slow progress.

Implications for Further Research

11. Do the educational methods used with educable mentally handicapped children in school have a bearing on their later adjustment to life and work? A wealth of information on the social, educational, and psychological characteristics of the children in this study has been collected.. Later outcomes in family life and in work adjustment could be related to this uniformly collected set of antecedent data. A longitudinal study is indicated.

12. An intensive study of classroom conditions affecting the learning and adjustment of educable mentally handicapped children based upon systematic schedules of observation is suggested.

13. The presence of educable mentally handicapped children in a regular classroom is frequently thought to have an adverse effect upon the rate of achievement of the rest of the class, but the point has not been demonstrated conclusively. This could be the focus of a further study. Similarly, the effect of emotionally disturbed, or poorly motivated, persistently non-achieving mentally handicapped children upon their EMH peers in a special class should also be a useful subject of study.

14. A number of the instruments developed in the Chicago Cooperative Research Project have demonstrated usefulness as screening and evaluation devices for use with educable mentally handicapped children. Some of these instruments may be equally appropriate for special types of normal youngsters. The Practical Reading Test, for example, may be useful for evaluating the reading abilities of normal youngsters with academic disabilities. The Chicago Test of General Information and General Comprehension may be equally useful with such a youngster. The Ethical Comprehension Test and the GICT may prove to be useful as screening devices for early identification of gifted children. It would appear worthwhile to conduct normative studies of these instruments.

# Appendix

## Appendix

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## CASE RECORD FOLDER

Chicago Board of Education
Cooperative Research Project

| | | Col. | Punch |
|---|---|---|---|
| 1 | Punch Card Set Number (See also Col. 51)........................ | 1 | 8 |
| 2-5 | Case Number ................................................ | 2-5 | |
| 6 | Examiner.................................................... | 6 | |
| 7-8 | District.................................................... | 7-8 | |
| 9 | Sex: Male -0 Female - 1..................................... | 9 | |

Group 3- 5- 7- Mexican, Puerto Rican
7 (Double punch on Col. 9) 9- American Indian
(Circle all double punched numbers throughout folder)

### SCHOOL HISTORY

10 Present Grade Placement.................................................... 10 ___

- 0- Kdg
- 0 & 1-1C
- 0 & 3-Primary Soc. Adj.
- 0 & 5-Soc. Adj. School, Graded Placement
- 0 & 7- Opportunity Room and Z Group
- 0 & 9- Soc. Adj. School, Ungraded
- 1-Grade 1
- 2-Grade 2
- 3-Grade 3
- 4- Grade 4
- 5- Grade 5
- 6- Grade 6
- 7- Grade 7-8-HS and Continuation School
- 8- Primary Ungraded
- 9- Advanced Ungraded

11 Previous School History (Dash if none apply)................................ 11 ___

- 0- Previously excused
- 1- Formerly EMH now regular
- 3- Parochial Regular
- 5- Residential school
- 7- Private non-parochial regular
- 9- Private special day school

Attendance (Present semester included)

12 Total number of semesters in school attendance....................... 12 ___

13 Total number of semesters in school attendance in Chicago........... 13 ___

14 Total number of semesters in EMH Placement........................... 14 ___
(For Cols. 12 and 14. code 0 for 10; double punch with 0 for 11 or more e.g. 01-11, 02-12, 03-13, etc.; include partial semesters; for Cols. 12 and 13 for 20 semesters double punch 1 & 3; 21 semesters double punch 1 & 4; 22 semesters 1 & 5; 23 semesters 1 & 6; 24 semesters 1 & 7 and 25 semesters 1 & 8.)

15-16 Average number days present per semester during past school year... 15-16 ___
Code: 50 days or less is recorded as 50
Double punch Col. 15 for following factors, but disregard Kdg. year
0- No legitimate reason for excessive absence
1- Attendance better last year than previous year
3- Attendance worse last year than previous year
No punch means that the average attendance did not differ by more than 5 days between last year and previous year

17 Number of changes of school............................................. 17 ___
(Code 9 for 9 or more; 0 for no change)

18 Educational deprivation (Did not attend or quality of schooling poor.. 18 ___

- 0-Rural South
- 1-Puerto Rico
- 3-Mexico
- 5- Europe
- 7- Foreign language spoken in home
- 9- Other

..................................................................................

Child's Name: ______________________ Date of Birth: ______________
Last Middle First

Parents or Guardians: ______________________ Address: ______________

School: ______________________ Home School: ______________

Room No: Teacher: Case: ______________

## PSYCHOLOGICAL TEST DATA

Col. Punch

Date of most recent BCS examination: ____________________

Date of first BCS examination: ____________________

19 Date and age at EMH Placement: ____________________ Age: ____________ 19 ____
Month Year (Code unit digit)
(Dash if regular grade; even if formerly EMH now Regular)

20-21 CA as of September, 19________

Year........................(Unit digit)................................ 20 ____

Month.............(Use 0 & 1 for 11 mos; 0 for 10 mos.;
no punch for 0 months)........................... 21 ____

22-23 MA as of September, 19________

Year.......................(Unit digit)................................ 22 ____

Month............(Use 0 & 1 for 11 mos.; 0 for 10 mos.;
no punch for 0 months)........................... 23 ____

24-25 IQ (IQ questioned by BCS punch 0 in Col. 24.) ...................... 24 ____
(If IQ not questioned by BCS but questioned by Project
Examiner, punch 3 in Col. 24)
Test on which child's placement in EMH was based________________ 25 ____

26 Parental attitude toward placement -reason for non-placement...... 26 ____

1- Accepted - expressed no opinion
2- Accepted - approved
3- Accepted - did not like it
4- Placed in spite of parental objection
5- Not placed - parents objected
6- Not placed - no transportation
7- Not placed - no space
8- Not placed - not considered urgent

## SOCIAL FACTORS

27 Marital status of parents.................................................... 27 ____

1- Married and living together
2- Temporary separation
3- Permanent separation
4- Divorced
5- Father deceased
6- Mother deceased
7- Both parents deceased
8- Parents marital status unknown
9- Other

28 Child lives with............................................................ 28 ____

1- Both parents
2- Father
3- Father and stepmother
4- Mother
5- Mother and stepfather
6- Blood relations
7- Living with adoptive parents since infancy
8- placed with adoptive parents after age of three
9- Living with foster parents
0- Living in children's home

29-31 Birthplace: (Double punch zero)

1- Chicago
2- Other city 100,000 or over
3- City 15,000 to 100,000
4- City or town of 2,500 to 15,000
5- Rural
6- County or State, designated, Rural South
7- State only designated - not South
0- Foreign Born

Father..................... 29 ____

Mother..................... 30 ____

Child...................... 31 ____

32 Family background (Head of household)........................................ 32 ___

0- U.S. and Canada
1- Puerto Rico
2- Mexico
3- Other Spanish - American
4- British Isles and Scandinavia
5- Slavic and Eastern European
6- Mediterranean European
7- North African and Middle East
8- Central Europe
9- Eastern Asia

33 Length of residence of family in Chicago........................................ 33 ___
(Code number of years, except 0 for less than 1 year; 9 for 9 years or more)

34 Person per room ratio (Divide number of persons living in the home by number of rooms) ....... 34 ___

1-0.0-0.50
2-0.51-1.00
3-1.01-1.50
4-1.51-2.00
5-2.01-2.50
6-2.51-3.00
7-3.01 - and more
(Double punch with 0 for converted dwelling)

35 Housing (Note converted dwelling)........................................ 35 ___

1- One family house
2- Apartment (3 flats or more)
3- Two flat
4- Rooming house
5- Basement
6- Stores (behind or over)
7- Public housing
(Double punch with 0 if no central heating system)

36 Known to Social Agencies ........................................ 36 ___
(Code from Background Factors sheet)

0- Protective
1- Family case work
3- Public assistance
5- Hospital
7- Child care
9- other

37 Social Service Clearance Data........................................ 37 ___

38 Occupation of chief wage earner (if father is not in the home, his occupation at time of leaving)........................................ 38 ___
(See job titles and descriptions)

1- Higher executive, major professional
2- Business managers, medium sized business, lower professional
3- Admin. personnel, small ind. business, minor professional
4- Clerical, sales, technicians, owners of small businesses
5- Skilled manual employees
6- Machine operators and semi-skilled employees
7- Unskilled employees
8- Not known
0- Nights (may double punch zero (0) if it applies)

39 Occupation of mother........................................ 39 ___

1- Executive, professional, business
2- Clerk, sales, or technician
3- Skilled
4- Semi-skilled
5- Unskilled
6- Assistance (ADC)
7- Works part time(double punch if applicable)
9- Housewife (do not double punch)
0- Nights (may double punch if applicable)

40 Number of siblings (code dash for no siblings)........................................ 40 ___
(Code 9 for 9 or more)

41 Number of siblings ever in EMH rooms (dash for none)........................................ 41 ___

42-43 Education of parents (dash for unknown)........................................

Father........................................ 42 ___
Mother........................................ 43 ___

1- Attended school 2 years or less
2- Attended elementary school at least 3 years
3- Elementary School graduate
4- Started second year high school
5- High School graduate
6- Attended college at least one year
7- College graduate
8- Dropped out first year high school
0- Validity of data questioned (double punch if applicable)

44 Transiency Index ........................................ 44 ___
45 Community Rating ........................................ 45 ___

PHYSICAL HISTORY

| | | Suspected | Medically Diagnosed | Col. | Punch |
|---|---|---|---|---|---|
| 46-48 | Physical Defects (double punch) | | | | |
| 46 | Vision | 0 | 1 | 46 | ______ |
| | Hearing | 3 | 5 | | |
| | Speech | 7 | 9 | | |
| 47 | Psychiatric | 0 | 1 | 47 | ______ |
| | Medical | 3 | 5 | | |
| | Organic (involving structural changes) | 7 | 9 | | |
| 48 | Neurological | 0 | 1 | 48 | ______ |

(If any above of prenatal origin, code 3, natal 5 in Col. 48. Indicate physical defect to which it applies)

49-50 Riggs-Rain Classification Factors (double punch) 49 ______

| 49 | | 50 | |
|---|---|---|---|
| 0 | Diagnosis of organic syndrome by neurologist or endocrinologist | 0 | Gross locomotor disturbances after age 4 |
| 1- | Head injury at birth | 1- | Epilepsy, seizures diagnosed |
| 3- | Deficient animation at birth | 3- | Severe head injury |
| 5- | Meningitis or encephalitis | 5- | Severe whooping cough before age 2½ |
| 7- | Abnormal neurological signs | 7- | More than 1½ months premature |

50 ______

Code: Suspected: Condition suspected by examiner, on basis of observation and of information from BHS, BCS, school reports, and other sources.

Diagnosed: Condition diagnosed by a physician.

NOTES:

Date Case Record Folder made out: ______________________________

Dates of visits: ______________________________

______________________________

______________________________

Chicago Board of Education
Cooperative Research Project

## BACKGROUND FACTORS

Name of Pupil: ____________________ Date of Birth: __________ School: ______________

I. IS THIS CHILD'S FAMILY KNOWN TO ANY SOCIAL SERVICE AGENCY? (36)

________ Protective
________ Public Assistance
________ Family Case work
________ Child Care
________ Hospital
________ Others (Specify)

0. Protective (Juvenile Protective Ass'n.; Family Court; etc.)
1. Family Case Work (Private and/or church affiliated) Catholic Charities Bureau; United Charities; Jewish Family and Community Service; Lutheran Family Service; Travelers Aid, etc.)
3. Public Assistance (Aid to Dependent Children; Old Age Assistance; Blind Assistance; Disability Assistance, etc.)
5. Hospital (Clinics as Cook County; Mercy, Children's Memorial, etc.)
7. Child Care (Institute for Juvenile Research; Loyola Child Guidance Clinic; Catholic Home Bureau; Jewish Children's Bureau; Lutheran Child Welfare Association; etc.)
9. Others (May be assistance by vereins, sokols, individual churches, etc. or private psychiatric care, etc.)

II. DO PARENTS COOPERATE WITH THE SCHOOL? (84)

________ 1. VERY COOPERATIVE:
(Always comes when sent for with a positive attitude; follow through on recommendations; act on own initiative in contributing constructive ideas, etc. when pertinent.)

________ 2. MORE COOPERATIVE THAN AVERAGE:
(Usually comes when sent for; may carry through on recommendations; will support school activities. Occasionally will take own initiative in contacting school and contributing ideas when pertinent.)

________ 3. AVERAGE:
(May come when sent for but may need reminder; may carry out some of recommendations, is supportive of school activities, but in a passive manner, requiring prodding but will usually assist when asked. Seldom contacts school on own initiative to contribute ideas.)

________ 4. LESS COOPERATIVE THAN AVERAGE:
(Needs repeated calls to come to school and when coming may be angry or annoyed by the "bother". Not really able to follow through on most suggestions and may not even try in areas that they can; not interested in PTA or any school activities generally.)

________ 5. UNCOOPERATIVE:
(Will probably not come to school or cooperate in any manner. This may be based on: a. overt hostility and negativism (or) b. lack of energy, interest, understanding.)

________ 6. UNKNOWN
(No punch)

Code for Basis of Judgement and C.L. (see bottom of page 2)

________ BASIS OF JUDGEMENT

________ C.L.

Page 2 Background Factors

III. WHAT IS HOME ATMOSPHERE LIKE? (85)

_____ 1. Definite evidence of excellent home atmosphere.
_____ 2. General impression that home atmosphere is good.
_____ 3. General impression that home atmosphere is fair.
_____ 4. Definite evidence of poor home atmosphere.
_____ 5. Unknown.
_____ Basis for judgement.
_____ C.L.

IV. EDUCATIONAL ASPIRATION OF FAMILY (WITH REFERENCE TO THE TOTAL FAMILY) (86)

_____ 1. College attendance taken for granted.
_____ 2. High School graduation taken for granted, college hoped for.
_____ 3. High school graduation of children hoped for.
_____ 4. Children not expected to complete high school.
_____ 5. Education or learning a trade not considered important.
_____ 6. Unknown.
_____ Basis for judgement.
_____ C.L.

V. HOW MUCH PRESSURE IS THERE FOR ACHIEVEMENT AT HOME? (73)

_____ 1. Overly intense pressure for achievement; unrealistic expectations.
_____ 2. Rather undue pressure for achievement.
_____ 3. Appropriate interest in child's achievement; realistic appraisal of his ability.
_____ 4. Too little interest in child's achievement; home does not expect enough.
_____ 5. Complete lack of interest in academic achievement; possible hostility toward school attendance.
_____ Basis for judgement.
_____ C.L.

BASIS FOR JUDGEMENT CODE AND C.L. FOR EACH OF ABOVE FACTORS

(1) Contact with parent, home visit.
(2) Notes to and from home, phone contacts.
(3) School personnel
  a. Truant officer.
  b. Nurse, etc.
(4) Talks with pupil, community resources.
(5) Peer comments, projective models, time of acquaintanceship. (in class, etc.)

_____ A. )
_____ B. ) Code 7
_____ C. )
_____ D. )
_____ E. ) Code 0
_____ F. )

Coding sources of Information and Confidence Levels on Home Background Factors.

Basis for Judgment Code

(1) Contact with parent, home visit.
(2) Notes to and from home, phone contacts.
(3) School personnel
  (a) truant officer
  (b) Nurse, etc.
(4) Talks with pupil, community resources
(5) Peer comments, projective models, time of acquaintanceship. (in class, etc.)

Illustrative Sources of Information (For reference of Examiner, but not coded)

(a) Parents
  (1) Direct--visits and interviews
  (2) Indirect-- notes from home and phone calls

(b) Child
  (1) Direct-- conferences and projective models (drawings, play, biographies)
  (2) Indirect -- Comments from classmates and others about child's home

(c) School resources
  (1) Formal -- Principal and school guidance personnel
  Folder, BCS and BHS reports
  (2) Informal -- Talks with other teachers

(d) Community Sources
  (1) Neighborhood leaders, scout leaders, agency personnel
  (2) Precinct captain, storekeepers, etc.

Code for Confidence Levels (Refers to Examiner's own confidence in his rating.)

A. Rating supported by first-hand evidence (Code 7)

B. Evidence considered reliable and accurate (Code 7)

C. Rating supported by fair degree of evidence (Code 7)

D. Rating based on impresseion (Code 0)

E. Rating considered a complete guess (Code 0)

F. Rating influenced by "Halo" (Code 0)
(To be coded only when Examiner feels no confidence in rating as a result of halo effect on his own rating.)

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## SPEECH OBSERVATION CHECKLIST

**Devised by Irma Kratovil, Supervisor, Division of Speech Correction**

| | | Col. | Punch |
|---|---|---|---|
| Child's Name: | Set No. | 1 | ___ |
| Case No. ___ | | 2-5 | ___ |
| Date of Birth: ___ | Age: (years) ___ | 6-7 | ___ |
| School: ___ | | | |

| Col. | Punch | | |
|---|---|---|---|
| 34 | ___ | A. GENERAL FLUENCY | (3) Adequate (2) Fair (1) Poor |
| 35 | ___ | | Amount of Talking: Adequate (5) Fair (3) Inadequate (1) |
| 36 | ___ | | Vocabulary: Adequate (5) Fair (3) Inadequate (1) |
| 37 | ___ | | Expression of Ideas: Adequate (5) Fair (3) Inadequate (1) |
| 38 | ___ | | Control of Communication: Adequate (5) Fair (3) Inadequate(1 |
| 39 | ___ | | Noticeable Symptoms of Stuttering: None (5) Few (3) Many (1) |
| 40 | ___ | | Other Symptoms of Emotional Disturbance During Speech: None (5) Few (3) Many (1) |
| 41 | ___ | B. INTELLIGIBILITY | (3) Adequate (2) Fair (1) Poor |
| | | | Articulatory Defects: |
| 42 | ___ | | Substitutions: None (5) Few (3) Many (1) |
| 43 | ___ | | Omissions: None (5) Few (3) Many (1) |
| 44 | ___ | | Distortions: None (5) Few (3) Many (1) |
| | | | Dialect: |
| 45 | ___ | | Foreign: None (5) Slight (3) Marked (1) |
| 46 | ___ | | Regional: None (5) Slight (3) Marked (1) |
| 47 | ___ | | General Pronunciation: Good (5) Fair (3) Poor (1) |
| 48 | ___ | C. VOICE | (3) Adequate (2) Fair (1) Poor |
| 49 | ___ | | Pitch: Satisfactory (5) Unsatisfactory (1) |
| 50 | ___ | | Intensity: Satisfactory (5) Unsatisfactory (1) |
| 51 | ___ | | Quality: Satisfactory (5) Unsatisfactory (1) |
| 52 | ___ | D. LEVEL OF LANGUAGE DEVELOPMENT | (3) Adequate (2) Fair (1) Poor |
| 53 | ___ | | Gestures and Non-speech Vocalizations Substituted for Speech: None (5) Few (3) Many (1) |
| 54 | ___ | | Structural Errors: None (5) Few (3) Many (1) |
| 55 | ___ | | Grammatical Errors: None (5) Few (3) Many (1) |
| 56 | ___ | SUBJECTIVE OVER-ALL RATING OF SPEECH | Superior (5) Good (4) Fair (3) Poor (2) Unintelligible (1) |

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# INTERPRETATION OF SPEECH OBSERVATION CHECKLIST

Prepared by: Irma Kratovil, Supervisor, Division of Speech Correction

## A. GENERAL FLUENCY

Amount of talking: This refers to the child's out-put of speech. Is his verbal behavior adequate in response to the stimulus? Is he spontaneous, or withdrawn, negative, monosyllabic, responding only to pressure or not at all?

Vocabulary: Note the extent of vocabulary in relation to the child's chronological age and also the accuracy of word usage.

Expression of ideas: Observe the ease or facility with which the child expresses his ideas. This depends on the adequacy of his vocabulary, his language maturation, and his ability to think clearly and focus his attention on what he wants to say. Can he express his ideas readily, or is his expression of them too deliberate, painfully slow, or fumbling?

Control of communication: Does the child use speech purposively, or indulge in random, disconnected talking? Does he listen when spoken to, or interrupt the speaker distractively with irrelevant comments?

Does he talk too rapidly, or is his speech too slow and labored, or drawling?

Noticeable symptoms of stuttering: Is the child at times unable to initiate speech? Does he use repetitions or initial consonants, syllables, or words? Does he hesitate or block silently on certain sounds? Does he have a noticeable distrubance in breath control, such as an inability to control the breath stream adequately? Examples of this might be using a forced inhalation before initiating speech, too much emission of breath followed by talking rapidly on residual air, or the interruption of speech by forced exhalations. Is the speech smooth and even, or jerky and staccato? Are there any overt signs of tension in the chest, throat, or face during speech?

Other symptoms of emotional distrubance during speech: To what extent are increased bodily tensions noticeable when the child is trying to communicate? Are there any mannerisms which detract from the child's speech, such as peculiarities of facial expression, absence of facial experssion, unattractive gestures, etc.?

## B. INTELLIGIBILITY

Articulatory defects:

There are three possible incorrect responses for a sound:

Substitution: The use of one sound for another, as, "tat" for "cat", or "wed" for "red".

Omission: Complete omission of a sound, as, "at" for "cat".

Distortion: This refers to an inaccurate production of the sound, as, for example, a lateralized "s" in the word "see", or an "l" sound which is made with inadequate tongue contact with the front of the palate. English is highly non-phonetic, so it is necessary to pay attention to the sound, rather than the spelling. For example, the sound of "s" mat be spelled with an "s" as in "base" or with a "c" as in "face", or the sound of "z" may be spelled with an "s" as in "boys" or "rose".

Dialect: Foreign: This may be due to English having been learned as a second language by a foreign-born child, or it may be the result of imitation in a bi-lingual home environment in which there is foreign accent in the family group.

Regional: Speech which differs from typical mid-western speech. Has the child recently come from a geographical area where his dialect is used and socially acceptable, or has he imitated the sub-standard speech patterns in his home or in his community?

General pronunciation: Is the pronunciation generally slovenly and indistinct ? Are final endings omitted, syllables blurred, or given inadequately in connected speech, even though the child can produce individual sounds correctly?

## C. VOICE

Pitch: Is the pitch habitually too high or too low? Is the voice monotonous due to lack of inflection?

Intensity: Is the voice habitually too loud to be pleasant or appropriate, or too soft to be heard easily?

Quality: Is the voice pleasant or unpleasant? Unpleasant voice qualities can be described as nasal, denasal, harsh, hoarse, husky, muffled, whining.

## D. LEVEL OF LANGUAGE DEVELOPMENT

Gestures and non-speech vocalizations substituted for speech: Is there little attempt at speech? Is the child's communication confined largely to grunts, and gestures, such as, pointing, shaking the head, etc., in order to communicate?

Structural errors: Is the child able to express himself in complete, well-formed sentences, or is he limited to single words, particularly nouns, or fragmentary phrases? Example: "ball table" for "the ball is on the table". Does he use various tenses correctly? Does he use immature or babyish expressions, such as "me want to go" or "her me mama".

Grammatical errors:

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## OBSERVATION CHECKLIST

| | | Col. | Punch |
|---|---|---|---|
| Child's Name ____________________ | Set No. ____________ | 1 | ____ |
| Case No. ____________________ | | 2-5 | ____ |
| Date of Birth: ____________________ | Age (years) ____________ | 6-7 | ____ |

School: ________________________________________

### I. PHYSICAL APPEARANCE

| Col. | Punch | | | | |
|---|---|---|---|---|---|
| 10 | ____ | **Attractiveness:** | (1) Attractive | (3) Average | (5) Homely, unattractive |
| 10 | ____ | **Cleanliness:** | (7) Exceptionally clean | (9) Average | (0) Dirty |
| 11 | ____ | **Personal Care:** | (1) Above Average | (3) Average | (5) Neglected, unkempt |
| 11 | ____ | **Height:** | (7) Tall | (9) Average | (0) Short |
| 12 | ____ | **Weight:** | (1) Overweight | (3) Average | (5) Thin |
| 12 | ____ | **Dental Hygiene** | (7) Excellent | (9) Average | (0) Poor |

(See also column 26 for energy level and posture)

### II. MISCELLANEOUS PHYSICAL CHARACTERISTICS (GROUP I)

| Col. | Punch | | | |
|---|---|---|---|---|
| 13 | ____ | **Tics:** | (1) Yes | (5) No |
| 13 | ____ | **Glasses:** | (7) Yes | (0) No |
| 14 | ____ | **Nail biting:** | (1) Yes | (5) No |
| 14 | ____ | **Drooling:** | (7) Yes | (0) No |
| 15 | ____ | **Hearing defect:** | (1) Yes | (5) No |
| 15 | ____ | **Poor coordination:** | (7) Yes | (0) No |
| 16 | ____ | **Left handed:** | (1) Yes | (5) No |
| 16 | ____ | **Stigmata of retardation:** | (7) Yes | (0) No |

(See also columns 27, 28, 29 for gross physical disfigurement, skin disorders, and badge of social deviate.)

### III. RELATIONSHIP WITH INTERVIEWER

| Col. | Punch | | | | |
|---|---|---|---|---|---|
| 17 | ____ | **Friendliness:** | (1) Initiates friendly overtures | (3) Responds to friendly overtures | (5) Unfriendly or unresponsive to friendly overtures |
| 17 | ____ | **Cooperativeness:** | (7) Anxious to please | (9) Normally cooperative | (0) Uncooperative |
| 18 | ____ | **Manners:** | (1) Exceptionally courteous | (3) Normally courteous | (5) Rude |
| 18 | ____ | **Over-dependent:** | (7) Yes | (0) No | |
| 19 | ____ | Yakitive, **excessively talkative:** | (1) Yes | (5) No | |
| 19 | ____ | Attention demanding: | (7) Yes | (0) No | |

| Col. | Punch | (Relationship with interviewer) | | | |
|---|---|---|---|---|---|
| 20 | ______ | Shyness vs. boldness | (1) Extremely shy | (3) Neither shy nor bold | (5) Bold |
| 20 | ______ | Sullenness vs. good naturedness | (7) Very sullen | (9) Neither sullen nor good natured | (0) Good natured |
| 21 | ______ | Resistance vs. submissiveness | (1) Extremely resistant | (3) Normally compliant | (5) Submissive |

## IV. TEST BEHAVIOR

| | | | | | |
|---|---|---|---|---|---|
| 22 | ______ | Self-confidence | (1) Over confidant | (3) Confident | (5) Unsure, ill at ease |
| 23 | ______ | Perseverance | (1) Doggedly persistent | (3) Normally perseverant | (5) Distractible |
| 23 | ______ | Enjoyment of testing procedure | (7) Too playful for test situation | (9) Normal enjoyment | (0) Found test distasteful |
| 24 | ______ | Hyperactive vs. sluggish | (1) Hyperactive | (3) Normally active | (5) Sluggish |
| 24 | ______ | Tense vs. Relaxed. | (7) Overly tense | (9) Normal tension-relaxation | (0) Too relaxed |
| 25 | ______ | Apprehension | (1) Excessively apprehensive | (5) No signs of apprehension | |

## V. MISCELLANEOUS PHYSICAL CHARACTERISTICS - GROUP II.

| | | | | | |
|---|---|---|---|---|---|
| 26 | ______ | Energy level | (1) Vigorous- full of "pep" | (3) Average energy level | (5) Listless or languid |
| 26 | ______ | Posture | (7) Too rigid | (9) Good posture | (0) Stooped or slouched |
| 27 | ______ | Gross physical disfigurement | (1) Yes | (5) No | |
| 28 | ______ | Skin disorders | (1) Yes | (5) No | |
| 29 | ______ | "Badge of social deviate" | (1) Yes | (5) No | |

## Vl. PERSONALITY PATTERN

31 ______ C.R.P. Examiner's appraisal based on tests and interview

32 ______ From BCS report

(1) Passive: Unresponsive, inert, lacking in spirit. Goes thru motions without self-involvement. May have withdrawal tendencies.
(3) Passively hostile: Passively resistant, but without active opposition. May sit silently not performing as requested.
(5) "Well adjusted"--Adaptive behavior: Usually cooperative, but may be passive or resistant, depending on circumstances.
(7) Hyperactive: Exhibits excessive physical activity. Restless, tense.
(9) Actively hostile: Responds to frustrations with verbal or physical hostility. Actively aggressive in relations with other children-- fights-- quarrels.

## Vll. DEGREE OF MOTIVATION IN TEST SITUATION

(1) Overly intense application to tasks presented. Showed signs of tension.
(3) Maintained effort throughout tests and interview.
(5) Application wavered briefly, but effort and attention easily re-directed to tasks.
(7) Interest and application sustained for approximately half the tasks.
(9) Urging and close supervision required throughout.
(0) Effort completely or almost completely lacking. Did not respond to encouragement.

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## PERSONALITY CATEGORIZATION

Name of Pupil: ______________________ Date of Birth: ____________ Sex: __________

School: ______________________ Teacher: ______________________

To the Teacher: Please categorize the above-named pupil according to one of the following seven categories. Place a checkmark in the blank in front of the category which best fits the pupil.

______1. Well Adjusted.

Usually cooperative.
Gets along well with others.
Shows interest.
Not a behavior problem.
May act aggressively or passively if the situation calls for it.

______2. Moderately Well Adjusted.

Usually cooperative, but may sometimes show overly aggressive or passive behavior. Usually gets along satisfactorily with others.

______3. Passive

Unresponsive, inert, lacking in spirit; or overly compliant.

______4. Passive-Aggressive.

Resistant, may sit silently without doing as requested.
May sulk or defy teachers or peers.

______5. Hyperactive.

Restless, tense, overactive.

______6. Active-Aggressive.

Actively aggressive toward others.
Fights, quarrels, threatens.

______7. Mildly Aggressive.

Occasionally aggressive, uncooperative, disinterested or quarrelsome, apparently without sufficient provocation.

## C-S DATA SHEET

Chicago Board of Education
Cooperative Research Project

Pupil:____________________ School:____________________

| | Col. | Punch |
|---|---|---|
| Punch Card Set No: | 1 | |
| Case No. | 2-5 | |
| Present Grade Placement<br>Code Grade, but 0-Kdg; 0 and 1 - 1C, 7 - Grade 7 & 8; 8 - Pri. EMH: 9 - Adv. EMH | 6 | |

| Col. | Punch | SCHOOL DATA: |
|---|---|---|
| 7 | | Enrollment<br>(1) Under 500 (3) 501 to 750<br>(5) 751 to 1000 (7) 1001 to 1400<br>(9) 1401 to 1900 (0) over 1900 |
| 8 | | School Classification (Size, by number of teachers) |
| 9-11 | | Average Class Size Rank |
| 12-14 | | Pupil Turnover Rank |
| 15-17 | | Overageness Rank |
| 18-20 | | Vacancy Rank |
| 21 | | Number of EMH Divisions in School |
| | | CLASSROOM: |
| 22 | | Number of EMH Pupils in Room Recommended for Placement |
| 23-24 | | Median Room IQ |

| Tally | | Code | |
|---|---|---|---|
| 130+ | | 115+ | (01) |
| 120-129 | | 110-114 | (02) |
| 110-119 | | 105-109 | (03) |
| 100-109 | | 100-105 | (04) |
| 90-99 | | 95-99 | (05) |
| 80-89 | | 90-94 | (06) |
| 70-79 | | 85-89 | (07) |
| 60-69 | | 80-84 | (08) |
| 50-59 | | 75-79 | (09) |
| 40-49 | | 70-74 | (10) |
| No data | | 65-69 | (11) |
| | | 60-64 | (12) |

| Col. | Punch | |
|---|---|---|
| 25 | | Estimated Median (Code 1 in col. 25) |
| 26 | | (1) Double Grade (3) Shift (5) AM<br>(7) PM (9) Departmentalized) |
| | | Homogeneity of Room<br>(1) Co-ed (2) Boys (3) Girls |
| 27 | | CA Range (Years in col. 28-mos. in col. 29 |
| 28 | | |
| 29 | | 01 for 11 mos.; 0 for 10; - for none |
| 30-31 | | Size of class |
| 32-33 | | IQ Range |
| 34-35 | | Lowest IQ |

| SPECIAL ASSISTANCE | Col. | Punch |
|---|---|---|
| Frequency of Tutoring in Reading Outside Regular Classroom<br>Days per week; (1) Daily (3) Once (5) Twice (7) Three (9) Four (0) None | 36 | |
| Amount of Time Given per Day for Tutoring in Reading<br>(1) 20 minutes or less (3) 30 minutes (5) 45 minutes (7) 60 minutes or more | 37 | |
| Organization of Tutoring Service<br>(1) By adjustment teacher<br>(3) By other teacher<br>(5) Individual (7) Group<br>(9) Both individual and group | 38 | |
| Frequency of Special Help in Arithmetic<br>Days per week: (1) Daily (3) Once (5) Twice (7) Three (9) Four (0) None | 39 | |
| Amount of Time Given per day for Tutoring in Arithmetic<br>(1) 20 minutes or less (3) 30 minutes (5) 45 minutes (7) 60 minutes or more | 40 | |
| Organization of Service for Arithmetic<br>(1) Adjustment teacher (3) Other teacher (5) Individual (7) Group<br>(9) Both individual and group | 41 | |
| ACTIVITIES AND TECHNIQUES<br>(1) Music (3) Arts and Crafts<br>(5) Shopwork, Handwork (7) Dramatics<br>(9) Audio visual aids | 42 | |
| (1) Unit Method<br>(3) Phonics<br>(5) Subject Matter<br>(7) Drill<br>(9) Individualized materials<br>(0) Unknown | 43 | |

### INTEGRATION OF EMH CLASSROOM WITHIN SCHOOL

| | | | |
|---|---|---|---|
| Physical Education | (1) Uses gym; served by gym teacher (3) none, or by Rm teacher | 44 | |
| Library | (1) Uses Library; served by librarian (3) None, or by Rm teacher | 45 | |
| Assemblies | (1) Attends, participates (3) None, or only on special occasions | 46 | |
| School Service | (1) EMH pupils hold service jobs (3) Not assigned service jobs | 47 | |
| Lunch | (1) Same responsibilities and arrangements as others<br>(3) Shortest lunch period, with early dismissal | 48 | |
| Recess | (1) Arrangements not different from rest of school<br>(3) Have recess apart from rest of school | 49 | |

Examiner____________________ Teacher:____________________ Date____________

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## CLASSROOM FACTORS CHECKLIST

A subjective evaluation based on classroom observation, conversation with teacher, comments of child, principal, adjustment teacher, and on other pertinent sources.

In making the evaluation, it is suggested that attention be directed toward the following areas. Extremes only are to be noted, and it is not to be considered an invalid record if in some instances both extremes are checked. If, in the opinion of the observer, an "average" would describe the situation, no check should be made. It is not to be considered that the following items are to be given equal weight.

Col. Punch (Code 5 for every item for which there was no opportunity to observe.)

### I. ROOM

50 ____ Size
1. Spacious e.g. 2 rooms for class; one for academic work, one for workroom.
3. Cramped, small room (obviously make-shift quarters).

51 ____ Physical Appearance
1. Unusually bright, cheerful atmosphere in room.
3. Drab, colorless, unattractive room.

52 ____ Order
1. "A place for everything and everything in its place."
3. Materials in disarray. Little organization.

53 ____ Emotional Atmosphere
1. Group appears relaxed, comfortable, happy in learning situation.
3. Group appears tense, fearful, inhibited.

54 ____ Purposeful Self-Direction of Child
1. Children appear to be goal-directed and able to initiate and follow through activites.
3. Children appear to do nothing without specific direction from teacher.

### II. TEACHER

55 ____ Teacher Enjoyment of Present Situation
1. Appears to enjoy working with present group.
2. Dislikes situation; seems to be tolerating situation out of necessity.

56 ____ Planning
1. Has carefully thought out goals with consideration given to needs of individual child.
3. Little fore-planning, makes plans as she goes along.

57 ____ Adaptability
1. Willing to adapt or abandon plans with reference to needs of children.
3. Follows schedule even though children lack background of understanding.

58 ____ Control
1. Controls room by own quiet manner and low voice.
2. Uses cross, threatening manner and loud voice.

59 ____ Attitude Toward Interaction Between Children
1. Accepts interaction between children as a desirable part of classroom behavior.
3. Expects children to remain in seats and ask permission before making any contact or initiating any action.

(TEACHER) Cont.
Col. Punch

60 ____ Handling of Children's Needs for Self-esteem

1. Looks for opportunities to praise children, give them recognition and build up their self-esteem.
3. Makes disparaging remarks about children in their presence or in the presence of other children.

61 ____ Acceptance of Children's Inadequacies or Dependencies

1. Patient with children. Will repeat explanations and give additional help or recognition as needed in an accepting manner.
3. Short, curt, critical or impatient with children's failures.

62 ____ Voice

1. Voice well modulated and pleasant.
3. Voice harsh, discordant or poorly controlled.

63 ____ Integration

1. Leader in teacher groups; is involved in total school program.
3. Isolates self and group from total school program.

III. TEACHER AND CRP CHILD

64 ____ Knowledge of Child as a Person

1. Has made an attempt to analyze child's needs and to understand him as a person.
3. Knows little about the child.

65 ____ Teacher's Evaluation of Adequacy of Present Placement in Relation to Child's Abilities and Needs. If in EMH Divisions:

1. Child is incorrectly placed in this division; believes that B.C.S. examination underestimates ability.
3. Child should be excused from attendance; believes that child lacks mental ability necessary for him to benefit from school attendance.
5. No information

If in Regular Grade:

7. Believes child is not at a disadvantage in his present class; and not conspicuously below the level of his group.
9. Believes child is a misfit despite her efforts to meet his needs.
0. No information

IV. GENERAL EVALUATIONS

(Circle 5,4,3,2,1, or -. Dash for omitted ratings)

66 ____ 5 4 3 2 1 - Over-all rating.
67 ____ 5 4 3 2 1 - Room.
68 ____ 5 4 3 2 1 - Effective Teaching.
69 ____ 5 4 3 2 1 - Friendly atmosphere.
70 ____ 5 4 3 2 1 - Teacher's understanding of C.R.P. child.

RECORD OF OBSERVATION

| Date | Time | Activities |
|---|---|---|
| | | |
| | | |
| | | |

Pupil: ______________________ School: ______________________ Case No. ________

Examiner: ______________________ Teacher: ______________________ Date: ________

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II.

# TEACHING THE EDUCABLE MENTALLY HANDICAPPED CHILD

## A COMPARISON OF FOUR METHODS OF INSTRUCTION

Cooperative Research Project SAE 6529

BOARD OF EDUCATION
CITY OF CHICAGO
1961

# TEACHING THE EDUCABLE MENTALLY HANDICAPPED CHILD: A COMPARISON OF FOUR METHODS OF INSTRUCTION

by

Frances A. Mullen
William Itkin

A four year research project on educable mentally handicapped children in the Chicago Public Schools conducted jointly by the Board of Education of the City of Chicago, the Department of Public Instruction of the State of Illinois, and the Office of Education of the Department of Health, Education, and Welfare of the United States of America.

BENJAMIN C. WILLIS
GENERAL SUPERINTENDENT OF SCHOOLS

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City of Chicago
Chicago, Illinois
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# TEACHING THE EDUCABLE MENTALLY HANDICAPPED CHILD:

## A COMPARISON OF FOUR METHODS OF INSTRUCTION

Part II. of a six-part report on a series of researches on

## HOW MENTALLY HANDICAPPED CHILDREN LEARN

## UNDER CLASSROOM CONDITIONS

carried on under the terms of Cooperative Research Project No. SAE 6529, dated February 28, 1957, between the United States of America acting through the United States Commissioner of Education of the Office of Education, Department of Health, Education, and Welfare, and the Department of Public Instruction of the State of Illinois, to provide research through the facilities of the Board of Education of the City of Chicago.

Part

I. Achievement and Adjustment of Educable Mentally Handicapped Children in Special Classes and in Regular Grades

II. Teaching the Educable Mentally Handicapped Child: A Comparison of Four Methods of Instruction

III. The Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children: Manual and Report

IV. Personality Appraisal of Educable Mentally Handicapped Children: A System for Scoring and Interpreting Picture Story Tests

V. The Chicago Cooperative Research Project Practical Reading Test "Every Day Reading for Fun and Meaning:" Directions for Administration and Scoring. Second Edition.

VI. Brief Screening Instruments for Evaluating the Academic Skills and Personal Adjustment of Educable Mentally Handicapped Children.

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# Chapter 1

## Problem

In an area of education where the consequences of success or failure may mean the difference between the student's success or failure in life, in which evaluation is difficult and research complicated by methodological difficulties, it is not surprising that experienced teachers and administrators have developed strong but divergent convictions which have not been adequately subjected to the test of research. Experienced workers with educable mentally handicapped (EMH) children differ markedly in their opinions as to which methods of teaching educable mentally handicapped children are the most effective. Some believe in the organization of the school day around correlated units, while others are equally sure that a subject-oriented method is more effective with EMH children. In the teaching of reading to mentally handicapped children, some feel that reading material should be selected on the basis of levels of reading ability, while others believe that it is more important to select reading materials on the basis of pupil interest and social maturity, without close regard to difficulty levels. Some teachers believe in a strong, planned phonetic program for EMH children, others in incidental instruction in phonics. The purpose of the Cooperative Research Project Methods Experiments was to determine which ways of organizing instruction and which methods of teaching reading are most effective with educable mentally handicapped children.

The major problems of the experiments reported in this paper were: (1.) To determine the relative effectiveness of a reading program based upon individual and group interests of educable mentally handicapped children compared with a developmental reading program based upon pupils' reading levels and skills. (2.) To determine the effectiveness of an instructional program based upon correlated units cutting across subject matter lines compared with a program based upon instruction given separately in each of the basic school subjects. (3.) To determine the effectiveness of a reading program with a strong emphasis upon phonics with a program of instruction in reading in which phonics is taught incidentally.

Hypotheses Tested

Major Hypotheses. The following major hypotheses were to be tested in the Cooperative Research Project methods experiments: (1.) A comprehensive program for the improvement of reading skills including extensive free reading based upon pupil interests is more effective than systematic developmental reading instruction for EMH pupils. (2.) A unit method in which much of the classroom activity centers around topics of social and personal importance to the group and to the individual students and in which classroom work cuts across subject lines is more effective than a method of instruction which compartmentalizes most of the classroom program into specific and relatively regular periods of instruction in each of the basic school subjects. (3.) In the teaching of reading to mentally handicapped pupils, a strong emphasis on phonics is more effective than instruction in reading in which phonics is presented only incidentally.

## Chapter 2

## Procedure

The Cooperative Research Project methods experiments involved intact classrooms of educable mentally handicapped children. These classrooms were first organized into six experimental groups, with a reduction to five experimental groups following a revision of the original design. More than fifty teachers participated in the experimentation. Although all of the children enrolled in the classrooms of the participating teachers were involved in the experiments, these reports are based only upon data on pupils of the 50-74 I.Q. range who were tested and retested over a controlled time interval.

Selection of Participating Classrooms. Both primary and advanced classes, from neighborhoods of varying socio-economic conditions, were involved in the methods experiment program. Only teachers were invited to participate in the methods experiments who had been recommended as outstanding teachers by their local administrators or by the administrator and supervisors of the program for educable mentally handicapped children. In selecting the participating teachers, an important consideration was the desirability of having classes of different experimental groups matched, at least approximately, in age, sex, and community socio-economic status. The choice of particular teachers included in the experiment was thus in part determined by chance circumstances resulting from the need to match classes. Participation in the experiment was voluntary. In placing teachers in the experimental groups, priority was given to assigning teachers to methods which they preferred and in which they had confidence.

Six experimental groups of classes were initially organized, as follows:

### A. Interests and Correlated Units

The teachers in this group were to make a special study of the individual interests of the mentally handicapped children in their classrooms and were to select reading materials for their pupils on the basis of pupil interest without close regard to the precise grade level of the selections. They were also to organize a considerable part of each day's work around a series of correlated units of instruction.

B. Interests and Subject Organization

Teachers in Group B were to give the same emphasis to interests as Group A, but their daily schedule was to be organized on a subject basis. Units could be used, if desired, in a subject area like Social Studies, but the unit would not be expected to carry a major part of the curricular load.

C. Levels of Reading Difficulty and Correlated Units

This group was to use the same approach to teaching by correlated units as Group A. Care was to be used in selecting reading materials for each child at exactly the right level of reading difficulty to provide challenge and growth, while not frustrating the child with technical difficulties beyond his grasp. These teachers were not to ignore pupil interest, but were to give them considerably less emphasis than Group A.

D. Levels of Reading Difficulty, and Subject Organization

This group was to select reading materials for their pupils according to level of reading difficulty, and was to organize the day's instructional program on a subject basis in the manner of Group B.

E. A Planned Phonetic Approach

Teachers in Group E were to use a special system of phonics instruction as a major approach to the teaching of reading.

F. An Incidental Phonetics Approach.

Teachers in Group F were to use eclectic methods in the instruction of reading. Phonics were to be employed only incidentally, as in guide books and in basic readers, but not as a major approach to instruction in reading.

Preparation for the Experiment

The six groups of teachers were brought together in seven evening meetings each at the Central Office, during the Fall semester of 1957. These meetings were convened under the leadership of three principals and three reading specialists, with EMH research teachers of the Cooperative Research Project staff as coordinators of the groups. The purpose of the orientation meetings was to discuss experimental procedures in the respective groups, to clarify the experimental design, and to provide opportunities for teachers to share knowledge of teaching materials and techniques appropriate for educable mentally handicapped children. Refinements in the experimental design resulted from the interaction of teachers, group leaders, and staff co-ordinators, which was made possible by these meetings.

Preliminary testing of the classes in the Methods Experiments began in February, 1958. In March, 1958, the staff co-ordinators of the Methods Experiments began a series of visits to the participating classrooms to determine how adequately the experimental conditions were carried out in the classrooms and to give help as needed in implementing the conditions of the experiment.

### Problems Encountered in the Methods Experiments

The major problems first encountered in implementing the methods experiments in the classrooms were: (1) defining the experimental conditions and methods of instruction in specific terms, (2) ascertaining and recording how well the experimental conditions were maintained in the classrooms, (3) recording observations of promising classroom techniques.

It became early apparent to staff coordinators visiting classrooms that some of the teachers were more skillful than others in planning and executing correlated units, and that some were more resourceful in utilizing children's interests in their reading programs. The phonics experiment presented no particularly difficult problems with respect to classroom implementation. The teachers in the interest experiment, however, were finding it difficult to carry out this experiment because of the scarcity of reading materials appropriate to different interests and social maturity levels of EMH children.

The loss of several teachers because of transfer, or because it was not feasible to carry out their experimental method in their classrooms, was another problem. Still another problem was pupil mobility. In some of the classrooms, transfers in and out were so rapid that few pupils could be expected to be available for retesting over the period of time covered by the experiments.

To meet these problems in the methods experiments, a simplification of the experimental design of the Interests-Units-Subjects experiment was made in April, 1958. The four groups in this experiment were reorganized into three groups. Group 1 was redesignated the Interest group, and consisted of six advanced classrooms. Group B was redesignated the Units group and included six advanced classes and four primary classes. Group C was redesignated the Subjects-Levels group, and served as a control for Groups A and B. Group C consisted of six advanced classrooms and four primary classrooms. The simplification of design eliminated over-lapping conditions in the experimental groups and made it possible for each group to concentrate on a single experimental condition. Transfers of teachers from one group to another necessitated by a change of the design were made in such a way as to insure that the teachers who were adhering most closely to a particular experimental condition were placed in that experimental group. A series of additional evening committee meetings was scheduled in the Interests-Units-Subjects experiment for the purpose of effecting better implementation of the experiments.

In anticipation of further possible losses of teachers to the experiment, several additional teachers were added in September, 1958. Difficulty was experienced in obtaining additional teachers for the Interest and Units groups in such a way as to maintain similarity among the experimental groups with respect to sex and socio-economic status, because teachers found it more difficult to use these methods with EMH children. The addition of several classrooms to the Methods Experiments in September, 1958, made it necessary to provide orientation to the experiment for the new teachers. This problem was met by selecting teachers who were already teaching in accordance with their particular experimental method, or who were willing to accept help in carrying out that method, and by scheduling follow-up evening meetings of the methods experiment groups during the Fall semester of 1958 to help the new teachers become oriented to the conditions of their experimental groups.

Other problems encountered in the methods experiments included maintaining uniform time intervals between tests and retests, loss of data because of pupil mobility or teacher mobility and illness, loss of data because of inability of staff Examiners to maintain uniform test-retest time intervals, either because of conflicts of schedule, illness, or unavailability of adequate testing time and space within a particular school.

Utilization of children's interests in a reading program for educable mentally handicapped children continued to present difficulties to several of the teachers in the Interest experiment. One difficulty was in drawing inferences from the activities in which the children were interested to reading materials in which they might be interested. Another problem was the scarcity of appropriate reading materials for these children. A number of instruments were devised by the staff for the purpose of helping teachers assess the reading interests of their pupils. These instruments included observation records, interests tests, and a pictorial test of reading interests. The preparation of instructional materials by teachers represented an effort to meet the problem of appropriate reading materials.

Teachers in the units experiments were not equally successful in cutting across subject lines and in selecting reading activities in keeping with the needs of EMH children. Staff co-ordinators, in their visits to participating classrooms, gave teachers assistance in carrying out the conditions of their particular experiments.

[illegible].

To minimize losses of data because of pupil transfer, classes were re-examined at semester intervals, and testing was scheduled in such a way as to equalize as much as possible the test-retest intervals among the experimental groups.

Controlling sources of bias in the methods experiments was a complex problem. It was anticipated that some of the most important sources of bias would be teacher differences, IQ differences among the groups, differences among the groups in initial achievement, sex differences, and differences in socio-economic status.

In view of the simplification of the design during the first semester of the experiment, the transfer of teachers from one group to another necessitated by the change in design, and the addition of teachers to the experiments during September, 1958, the Spring, 1958 semester of the Methods Experiments was considered a pilot study semester. Differences among the experimental groups on criterion measures were therefore tested for the period of September-October, 1958, to May-June, 1959.

### Design of the Cooperative Research Project Methods Experiments

Table 1 presents a schematic diagram of the design of the Cooperative Research Project methods experiments showing age, sex, and socio-economic classifications of the classrooms in the different experimental groups as of September, 1958.

Table 2 presents statements of the experimental conditions in the reconstituted groups which were agreed upon by participating teachers, group leaders, and staff co-ordinators as a result of interaction in the orientation meetings.

### The Evaluation Program

The evaluation program in the experimental groups was a comprehensive one.

The testing program was repeated at semester intervals, and included administration of the Stanford Achievement battery, Gray Oral Reading Test, a short form of the Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children, a Speech Observation Checklist, the Cooperative Research Project Word Recognition Test, and a record of the staff examiners' observation of each child in the testing situation. Teachers completed Behavior Checklists and Adjustment Rating Scales for their pupils. Close control was maintained over test-retest intervals in order to maintain adequate uniformity among the experimental groups. Staff examiners maintained checklists of forms to be filled out and tasks to be completed to help them avoid excessive loss of data.

# Chapter 3

## Results

### Comparison of Effectiveness of Methods A (Interests), B (Correlated Units) and C (Subjects-Levels)

The original project proposal and the studies of correlates of achievement and adjustment carried out by the Chicago Cooperative Research Project (Mullen and Itkin, 1961) indicated that in the analysis of the methods experiments data, the comparability of the groups on a number of factors would need to be taken into consideration. Several of these factors were so important that their possible differential effects upon experimental conditions might bias results. These included: (1) Classes (primary or advanced), (2) mental age, and (3) initial reading achievement. Other factors on which it was considered necessary or desirable to determine the comparability of the experimental groups included: (1) sex, (2) chronological age, (3) IQ, (4) validity of IQ questioned, (5) community socio-economic ratings, (6) teacher-effectiveness, (7) educational experience in the Rural South, and (8) pupil personality.

The major criteria by which progress would be measured included: (1) average reading, (2) average arithmetic, (3) oral reading, (4) practical reading, (5) spelling, (6) general information and general comprehension, (7) adjustment ratings, and (8) motivation scale scores.

### Check on Comparability of Groups on Major Factors Related to Criterion Measures

In a check on the comparability of the groups on major factors related to criterion measures, all classrooms in which two visiting staff co-ordinators had agreed independently that the experimental conditions had not been carried out adequately were eliminated. There were five such classrooms, one in each of the five experimental groups. None of these classrooms was used in the analysis of the methods experiments data reported in this paper. Only classrooms in which test-retest data for September, 1958, to June, 1959, were available were used. Data on subjects with IQ's of 75 or above were eliminated from the comparisons of the progress of the experimental groups.

Tetrachoric correlations were computed with progress in reading during the test-retest interval dichotomized at the median interval and the following factors dichotomized as indicated in Table 3:

(1) sex,

(2) IQ,

(3) educational background,

(4) community socio-economic status,

(5) initial achievement in reading,

(6) teacher-effectiveness,

(7) mental age,

(8) validity of IQ questioned,

(9) chronological age.

Results are presented in Table 3.

All correlations were very low. The largest, between progress on reading and chronological age, IQ questioned, and IQ, were between .26 and .34, in a negative direction for CA and validity of IQ questioned, and in a positive direction for IQ, dichotomized at 75. The coordinators' ratings on adequacy with which experimental conditions were carried out appeared to be unrelated to reading progress. Initial achievement in reading also appeared unrelated or only slightly related to progress in reading in special divisions over a two-semester interval. The correlation between mental age and progress was slightly negative, and may have been accounted for by the negative correlation between chronological age and progress. The other correlations ranged from .12 to .14. Although correlations with reading progress were very low, it was decided to carry out an analysis in the Interests-Units-Subjects experiment in which as many of these background factors as possible would be controlled.

Design for Comparison of Methods A (Reading Interests), B (Correlated Units), and C (Subjects).

A comparison of the progress of Methods A (Reading Interests), B (Correlated Units), and C (Subjects) was made by means of an analysis of variance.

In the analysis of the findings of this experiment, it was desired to achieve a substantial degree of statistical control over major factors which might otherwise bias results. The objective of the analysis was to determine which of the three methods would be most effective if important conditions affecting learning were comparable in the experimental groups. Accordingly, a regression analysis was carried out in which an attempt was made to achieve a degree of control over eight background variables.

Each subject was classified in one of two levels on each of the eight background factors, and according to teaching method. This constituted a $2^9$ factorial design. The application of the methods of regression analysis was required because of an unequal number of cases and measures in the different categories. The method of analysis used is standard technique for the analysis of unbalanced data, and is explained in Kempthorne, Design and Analysis of Experiments, Section 6.5.2. (1952).

The eight background or "input" variables were dichotomized as follows:

Sex: Male vs. Female

CA : Advanced Classes: 14 and above vs. 13 and below

Primary Classes: 11 and above vs. 10 and below

IQ : 67 to 74, inclusive vs. 66 and below

Validity of the IQ questioned: IQ questioned vs. IQ not questioned

Teacher's Effectiveness: coordinators' rating of Superior in carrying out experimental conditions, vs. coordinators' ratings of Excellent or Adequate

Community Socio-Economic Status: Category III or higher vs. Category I and II

Initial Reading: Advanced Classes: 3.0 and above vs. 2.9 and below
Primary Classes: 2.0 and above vs. 1.9 and below

Personality Pattern from Teachers' Behavior Checklist: Passive, Passive-Aggressive and Aggressive vs. categories other than Passive, Passive-Aggressive or Aggressive.

In the comparison of the effectiveness of the three methods in the Advanced groups, the three groups were compared singly with each other; Group A was compared with Group B and with Group C, and Group B was compared with Group C. In the comparison of the methods in the Primary Groups, Method B was compared only with Method C, since the Interest experiment had been limited to Advanced groups.

The purpose of the regression analysis was to estimate the overall average effects of the eight background variables which were being controlled. The observed means were adjusted to compensate for differences in the makeup of the experimental groups with respect to these eight independent variables. Thus, the adjusted means represent the best estimate of what the results would have been had the groups been homogeneous with respect to the eight background variables.

There was complete information on the eight "input" or background variables. The extent of missing data on the major criterion variables was not considered serious in view of the scope of the experiment, and adjustments were made for the missing values. For criterion measures for which too much data were missing, no attempt was made to compensate for missing values nor to measure differences.

The regression analysis was designed to test the interaction of the experimental methods for two levels of reading achievement; i.e., for the better readers compared with the poorer readers. This was done in order to determine whether a particular method were equally effective for good and poor readers. In the absence of an interaction, it would be justifiable to speak of the main effect of the method without qualification. The presence of a significant interaction would indicate that the effect of the two methods was not the same at the two levels of reading achievement. It would, thus, not be justifiable to interpret the main effect of a method without reference to reading level.

Table 4 presents the means and mean differences between experimental groups A, B, and C for Advanced Groups and for Primary Classes in the Interests Units-Subjects experiments. Significance tests were not based on the raw means, however. They were based on the mean differences adjusted for initial differences between the groups on the eight background factors. The analysis of variance in the Interests-Units-Subjects experiment is presented in Table 5. Table 6 presents adjusted mean differences between the experimental groups, and Table 7 presents the significant interactions found between the experimental groups, with an interpretation of these interactions.

Findings: Differences between Advanced Groups

For the Advanced groups, none of the differences between the three methods in average reading, arithmetic, oral reading, practical reading or speech ratings was significant. Method A, the Interest Method, was superior to the Correlated Unit method in general information and comprehension.

Method C, the Subject-oriented method, was superior to the Correlated Unit method in general information and comprehension for the poorer readers, but not for the better readers.

The Subject method was superior to the Interest method in spelling.

The Subject method was also superior to the Unit method in spelling, for the poorer readers, but the difference between these two groups in spelling for the better readers was not significant. No significant differences were found between the Interests and Subjects groups on the teachers' Adjustment Ratings and Motivation Scale scores of the Behavior Checklist. The Units groups could not be compared with the other two groups in teacher ratings because of incomplete data.

Differences between Primary Groups

For the primary groups, differences between the Units and Subjects methods in arithmetic, general information, speech ratings, word recognition, test scores, adjustment ratings and motivation scale scores were not significant.

The Subjects groups was superior to the Units group in both Average Reading on the Stanford Achievement battery and Oral Reading on the Gray Oral Reading Paragraphs test.

The Subjects group was also superior to the Units group in spelling for the better readers, but not for the poor readers.

A Comparison of the Effectiveness of a Planned Phonetic and an Incidental Phonetic Orientation Toward Instruction in Reading for Educable Mentally Handicapped Children.

Time and funds were not available for completing the same kind of analysis of variance in the phonics experiment as was carried out in the Interest-Units-Subjects experiment. Table 8 compares the phonics groups on background factors.

These data indicate that the two groups were fairly comparable with respect to sex, questioned validities of IQs' and initial achievement. The groups differed in mental age, IQ, and socio-economic ratings. Differences on these factors, however, may have been attributable to the elimination of one primary class of high socio-economic status from one group and an advanced classroom of low socio-economic status from the other because of coordinators' judgments that the experimental methods had not been carried out adequately in these classes. It was thought that more bias would have resulted by retaining classrooms in which experimental conditions were not carried out to an acceptable degree than by eliminating them; therefore, imbalance between the groups on these factors was not considered serious. The Incidental Phonics group, however, had an advantage in a greater proportion of pupils in classrooms given superior ratings by coordinators and a smaller number of pupils receiving Passive, Passive-Agressive, or Aggressive categorizations on the teachers' Behavior Checklist.

## Findings

Comparisons of progress of the planned and incidental phonetic groups must be considered more subject to the possible influence of biasing factors than the comparisons made in the analysis of variance of the A, B, and C groups. Because the disparity between the two phonics groups in IQ appeared important, the mean gains of the planned phonetic and incidental phonetics groups were compared by means of t-tests for two levels of IQ on seven criterion measures. Table 9 presents the results of t-tests of the differnces between these two groups. None of the differences between the two groups in the phonics experiment on average reading, oral reading, spelling, average arithmetic, general information and general comprehension, speech, or Adjustment Rating Scale scores were significant for either of two levels of IQ. The planned phonics group made a greater gain in adjustment rating scale scores which approached significance, however.

## Chapter 4

## Discussion

Greater confidence may be placed in the findings of the Interest-Units-Subjects experiment, in which a great deal of statistical control was exercised through analysis of variance made possible by electronic computation of data, than in the results of the comparisons of the planned and incidental phonetic approaches to the teaching of reading, in which such controls were not exercised. In spite of the degree of statistical control in the Interests-Units-Phonics experiment, however, which included an attempt to control the teacher variable, there must remain some question as to the adequacy of control over the teacher variable. Because of illness of participating teachers and inability of some teachers to carry out their experimental conditions to an adequate degree, only four classes remained in the Interest group and only three primary classrooms in the Units experiment.

Three steps were taken in the methods experiments in an effort to attain a measure of control of the teacher variable. First, was the selection of only highly recommended teachers. Second, data from classes in which it was judged that experimental conditions had not been carried out to an adequate degree were eliminated. Third, remaining classes were dichotomized in terms of the degree to which their particular experimental conditions were carried out. Thus, it may be presumed that a considerable degree of control over the teacher variable was effected. Nevertheless, in view of the scarcity of research on teacher personality as related to teacher effectiveness, and in view of the small number of classrooms remaining in certain experimental groups, some question of the adequacy of control of the factor of teacher personality must remain. Our data, however, tend to contradict the hypothesis that for educable mentally handicapped children a correlated unit approach to instruction is superior to instruction oriented around subjects. Neither do our data support the hypothesis that instruction in reading oriented around children's interests is superior for educable mentally handicapped children to instruction in reading based on a systematic developmental approach.

Our data indicated that in reading, the primary group children in the Subjects-Levels groups improved more than the pupils in the Correlated Units group. There were no significant differences in progress in reading among the three experimental groups for advanced classrooms, however. For acquisition of skill in spelling and general information and comprehension, the Subjects-Levels approach appeared to be superior to the Interest group in spelling, and the Interest group appeared to be superior to the Units group in general information and comprehension. For advanced groups, our data indicated that the Subjects-Levels approach with EMH children was superior to the Correlated Units method for poor readers, both with respect to performance in spelling and with respect to performance in General Information and General Comprehension. For primary groups, the Subjects-Levels approach appeared to be superior to the Units approach for instruction in reading..

Since differences among the three methods groups on most criterion measures were not significant, caution must be exercised in interpreting results. In view of the little that is known about relationships between teacher personality and effectiveness in the use of different methods of teaching, however, our results indicate that with teachers of educable mentally handicapped children, it would not be advisable to attempt to promote any particular methods of instruction for all teachers regardless of teachers' personality and instructional preferences. Our data do not suggest that it would be advisable to attempt to promote the wider use of correlated units and of reading programs based upon children's interests with educable mentally handicapped children in the face of lack of confidence of a teacher in her ability to use these methods effectively. On the other hand, it is not believed that our data justify discouraging teachers who possess the creativity and the confidence in their ability to use correlated units and children's interests in instructional programs. Our data, however, appear to suggest that teachers using correlated units of instruction, especially with beginning readers, need to be particularly careful in planning their program to avoid neglect of certain areas of the curriculum or of certain curricular objectives.

Our data did not show either a planned phonetic approach to the instruction of reading for educable mentally handicapped children or an incidental phonetics approach to be superior to the other with respect to any of the criterion measures employed in this study. Additional study to determine possible interactions between reading levels and mental age is, however, recommended.

## Chapter 5

## Summary

This paper reported upon experiments comparing four methods of instruction of educable mentally handicapped children. In one experiment, statistical controls were exercised on eight background variables through an analysis of variance, and three methods of instruction were compared on seven to nine criterion measures. The three methods were: (1) an Interest Method, in which the reading program was based upon individual and group interests, (2) a Correlated Unit Method, centered around topics of social and personal importance to the group, and (3) a Subject-oriented Method, in which instruction was given separately in each of the school subjects, and the reading program was based upon pupils' reading levels and skills. In another experiment, two methods of teaching reading to educable mentally handicapped pupils were compared; one, a planned phonetic program, and the second, an eclectic program of reading instruction in which phonics was utilized only incidentally.

The Cooperative Research Project experiments involved more than fifty intact classrooms of educable mentally handicapped children. The results reported in this paper were limited to children of the 50-74 IQ range who were tested and retested over approximately an eight month interval.

In general, teachers were assigned to experimental methods which they used, preferred, or were willing to learn. They were given help in carrying out the conditions of their experiments through an in-service training program of evening meetings and through visits of staff coordinators. Only teachers recommended as outstanding were used in the experiments, and only data from classrooms in which it was judged that experimental conditions were adequately carried out were used in the analysis of data.

For Advanced Groups, differences between the three methods groups in neither reading nor arithmetic were significant. The Subject method appeared superior to the Interest method in spelling, and for poorer readers, the Subjects method also appeared superior to the Unit method in spelling. The Subject group appeared superior to the Unit group in general information and comprehension for the poorer readers. The Interest group appeared to be superior to the Units group for general information and comprehension.

For primary groups, the Subjects method appeared to be superior to the Units method for both average reading and oral reading. It also appeared to be superior for the better readers in spelling. Differences between the two groups in information and comprehension, arithmetic, adjustment ratings, and motivation scale scores were not significant.

No significant differences were found in t-tests between the gains of the two groups in the phonics experiment in any of the criterion measures used.

In spite of the elaborate statistical controls used in the Interests-Units-Subjects experiment, it was felt that not enough is known about the teacher variable, about relationships between teacher personality and effectiveness in employing different methods, to warrant confident conclusions with respect to the findings of these experiments. It does appear fair to conclude that the Interests and Units methods have not demonstrated their superiority to a subject-oriented approach for educable mentally handicapped children. In an experiment in which teachers were assigned only to methods in which they had confidence or in which they accepted special training, a subject-oriented approach appeared to be superior to a units approach in a number of respects and seemingly inferior in none that were demonstrable in this experiment. On the other hand, the conclusion does not appear warranted that teachers should be discouraged from using pupil interests or units if they are creative, resourceful, and possess confidence in these methods. Particular care appears indicated in planning units for educable mentally handicapped children to provide for comprehensive coverage of curriculum content and for meeting important curricular objectives.

## Table 1

### Schematic Design of Interests-Units-Subjects Experiment

Advanced Groups

| Group A Reading Interests | | Group B Units | | Group C Subjects-Reading Levels | |
|---|---|---|---|---|---|
| Sex | Community Socio-economic Levels | Sex | Community Socio-economic Levels | Sex | Community Socio-economic Levels |
| Boys | III | Boys | III | Boys | III |
| Girls | III | Girls | III | Girls | IV |
| Co-ed | IV | Co-ed | VI | Co-ed | IV |
| | | Co-ed | IV | Boys | IV |
| Boys | I | Boys | I | Boys | II |
| Girls | II | Girls | I | Girls | I |
| Boys | I | Boys | III | Boys | I |
| | 6 | | 7 | | 8 |

Primary Groups

| | | | |
|---|---|---|---|
| Co-Ed | IV | Co-Ed | IV |
| Co-Ed | III | Co-Ed | III |
| Co-Ed | II | Co-Ed | II |
| Co-Ed | I | Co-Ed | I |
| | 4 | | 4 |

## Table 1 (Cont'd.)

## Schematic Design of Phonics Experiment

| Group E<br>Planned Phonetic Program | | | | Group F<br>Incidental Phonics Program | | | |
|---|---|---|---|---|---|---|---|
| Sex | Community Socio-economic Levels | Sex | Community Socio-economic Levels | Sex | Community Socio-economic Levels | Sex | Community Socio-economic Levels |
| **Advanced** | | | | | | | |
| Co-ed | I | Girls | IV | Girls | I | Boys | III |
| Co-ed | I | Co-ed | III | Girls | I | Co-ed | I |
| **Primary** | | | | | | | |
| Co-ed | IV | Co-ed | I | Co-ed | III | Co-ed | I |
| Co-ed | II | Co-ed | VII | Co-ed | II | Co-ed | IV |
| Co-ed | IV | Co-ed | I | Co-ed | IV | Co-ed | II |
| | | | 10 | | | | 10 |

## Table 2

### Description of Experimental Conditions

### Experimental Conditions, Group A - (Interest Reading)

Teachers make a special study of the individual interests of the mentally handicapped children in their classrooms. They investigate these interests through any medium, formal and informal, which they find helpful. This investigation should be continuous.

Teachers provide reading materials on the basis of information obtained about pupils' interests. These reading materials are selected on the basis of the individual and group interests of the children in the classroom. The child should be able to read these materials with success and enjoyment. One outcome may be a desire to read more, thereby broadening and deepening his interests. A second outcome may be a greater development in reading skills.

Of the entire time for the reading program, from one-half to two thirds of the reading period per se is devoted to reading on the basis of individual and group interests. The remainder of this time is given to the development of reading skills through the use of basic materials.

## Table 2 (Cont'd.)

## Experimental Conditions, Group B - (Units)

Group B is organizing its instructional program, including the teaching of reading, through the correlated unit method. In this approach, a teacher includes as many subject areas as the topic and problem naturally allow. Care is used in selecting reading materials for each child to provide challenge and growth and yet not to frustrate him with technical difficulties beyond his grasp. The length of the unit is determined by many factors, such as interests and social maturity of the pupils, topic selected, and the resources available. One half to two thirds of the total reading period per se is devoted to reading through a correlated unit. The remainder of the period is devoted to reading work in basic materials in order to develop important skills.

The unit provides experiences which meet the curricular objectives of the Chicago Public Schools, taking into consideration the characteristics of the mentally handicapped child.

The concept and understandings developed through the unit method is not independent of the reading for the development of skills. These two aspects of reading are closely interrelated.

Table 2 (Cont'd.)

Experimental Conditions, Group C - (Subjects-Levels)

Group C is (1) selecting reading materials in accordance with level of difficulty, as demonstrated by the child's reading achievement and reading problems, and (2) is organizing the day's instructional program on a subject basis. During the regular reading period the teacher follows a program of developing reading skills through a systematic approach. In this approach, the pupil progresses at his own rate through carefully planned successive reading experiences. Reading instruction is not limited to the basic text or to activities recommended in the teacher's guide book. Teachers are encouraged to use various techniques and instructional materials. Assuming sufficient materials are not available at the desired levels, they are encouraged to adapt materials already available and/or write new materials.

## Table 2 (Cont'd.)

## Experimental Conditions, Group E - (Planned Phonetic Program)

Teachers in this group are to be free to use every avenue of approach to the teaching of reading which they deem advisable for the particular age and achievement level of the children in their classes. In addition, they are required to teach a planned phonetic approach daily for twenty minutes per child. This twenty minute period is to be taught in planned lessons, separate from the reading lesson. They are to make use of many games to create interest and to develop the children's auditory and visual discrimination powers. They are to teach the application of phonetic powers when a child meets a phonetic word. They are to combine the technique of phonetic power with contextual clues.

Table 2 (Cont'd.)

Experimental Conditions, Group F - (Incidental Phonics Program)

Teachers in this group are free to use every avenue of approach to the teaching of reading which they deem advisable for the particular age and achievement level of the children in their classes, with the exception of any kind of planned phonetic lessons offered daily for any specific amount of time. Although a phonetic approach is not excluded from classes in this group, it is to be limited to the activities recommended in the guidebook that accompanies the specific series of basic readers being used, and to such supplementary activities as might arise to fill the needs of specific children. They are to use no isolated drill. Phonics workbooks are not to be used, but pages of phonetic work included in the workbook of a series is permitted.

Teachers in both Groups E and F are not required to spend any specified minimum amount of time in the formal teaching of reading per child in the classroom. However, no teacher is to be allowed to spend more than a maximum of 300 minutes per child per week in the formal teaching of reading. This would not mean that the children could not spend more than 300 minutes per week in some reading activity. Any differentiation in reading activities in which children in different classrooms would engage would show up in the "Monthly Checklist of Reading Activities" send to the CRP office at the end of each school month.

The following activities are to be classified as the formal teaching of reading in both Groups E and F:

1. Motivation for a specific reading lesson.
2. Work in basic readers.
3. Supervised seat work and workbook lessons in reading.
4. Instruction in word attack.
5. Experience stories or charts when prepared for the purpose of a reading lesson.

Table 2 (Cont'd.)

Experimental Conditions, Groups E and F

6. Audio-visual instruction in learning to read.
7. Games to reinforce word recognition.
8. Reading readiness instruction.
9. Supervised silent reading units.

The following activities were not classified as formal teaching of reading in either Group E or Group F:

1. Stories or poems read to children for enjoyment and appreciation, or those memorized.
2. Free reading for pleasure.
3. Introduction of new terms in subject matter fields other than reading.
4. Stories for language and composition.

### Table 3

### Tetrachoric Correlations between Reading Progress of Methods Experiment Classrooms During a Two-Semester Interval and Other Factors

| | Below Median Progress | Above Median Progress | Totals | $r_t$ |
|---|---|---|---|---|
| IQ's of 75+ | 48 | 82 | 130 | |
| IQ's of 74- | 186<br>234 | 155<br>237 | 341<br>471 | +.262 |
| Boys | 81 | 82 | 163 | |
| Girls | 105<br>186 | 73<br>155 | 178<br>341 | +.244 |
| IQ of 74 and below: Above Median IQ | 93 | 91 | 184 | |
| Below Median IQ | 93<br>186 | 64<br>155 | 157<br>341 | +.140 |
| Educational Experience in Rural South | 19 | 21 | 40 | |
| Without Rural South or foreign language background | 154<br>173 | 116<br>137 | 270<br>310 | +.125 |
| Socio-Ec. Category III and above | 76 | 76 | 152 | |
| Socio Ec. Category I and II | 105<br>181 | 77<br>153 | 182<br>334 | +.119 |
| Above Median in Initial Reading Achievement | 89 | 83 | 172 | |
| Below Median in Initial Reading Achievement | 97<br>186 | 72<br>155 | 169<br>341 | +.093 |
| Above Median Coordinators' Rating on Carrying out Experimental Conditions | 82 | 73 | 155 | |
| Below Median Coordinators' Rating on Carrying out Experimental Conditions | 104<br>186 | 82<br>155 | 186<br>341 | +.034 |

Table 3 (Page 2)

| | Below Median Progress | Above Median Progress | Totals | $r_t$ |
|---|---|---|---|---|
| Above Median MA | 101 | 73 | 174 | |
| Below Median MA | 85 | 82 | 167 | |
| | 186 | 155 | 341 | $r_t$= -.111 |
| IQ Questioned | 43 | 18 | 61 | |
| IQ not Questioned | 143 | 137 | 280 | |
| | 186 | 155 | 341 | -.280 |
| Above Median CA | 113 | 61 | 174 | |
| Below Median CA | 73 | 94 | 167 | |
| | 186 | 155 | 341 | -.335 |

## Table 4

### Mean Gains and Mean Differences, Experimental Groups A, B, and C

| Criterion | Means, Advanced Groups<br>Group A (Interests) | <br>Group B (Units) | <br>Group C (Subjects) | Primary Groups<br>Group B (Units) | <br>Group C (Subjects) |
|---|---|---|---|---|---|
| Average Reading, Stanford | 0.38 | 0.22 | 0.30 | 0.34 | 0.56 |
| Spelling, Stanford | 0.24 | 0.27 | 0.45 | 0.07 | 0.55 |
| Average Arithmetic, Stanford | 0.39 | 0.37 | 0.28 | 0.29 | 0.43 |
| Gray, Oral Reading | 0.62 | 0.44 | 0.46 | 0.46 | 0.71 |
| Short Form of Chicago Test of General Information and General Comprehension | 4.06 | 1.06 | 2.72 | 5.10 | 3.29 |
| Practical Reading Test | 2.08 | 1.13 | 1.88 | | |
| Speech Checklist | 0.20 | 0.26 | 0.19 | 0.09 | 0.38 |
| Teachers' Adjustment Rating Scale | 0.88 | | 0.36 | 1.09 | -0.24 |
| Motivation Scale, Teachers' Behavior Checklist | 0.14 | | -0.25 | 1.23 | 0.28 |
| Word Recognition Test | | | | 0.28 | 0.54 |

### Mean Differences between Experimental Groups

| Criterion | Advanced Groups<br>A minus - B | <br>A minus - C | <br>B minus - C | Primary Group<br>B minus-C |
|---|---|---|---|---|
| Average Reading, Stanford | 0.16 | 0.08 | -0.08 | -0.22 |
| Spelling, Stanford | -0.04 | -0.21 | -0.17 | -0.49 |
| Average Arithmetic, Stanford | 0.02 | 0.10 | 0.08 | -0.14 |
| Gray Oral Reading | 0.18 | 0.16 | -0.02 | -0.25 |
| Short Form of Chicago Test of General Information and General Comprehension | 3.00 | 1.34 | -1.66 | 1.80 |
| Practical Reading Test | 0.95 | 0.20 | -0.75 | |
| Speech Checklist | -0.06 | 0.01 | 0.08 | -0.29 |
| Teachers' Adjustment Rating Scale | | 0.52 | | 1.33 |
| Motivation Scale, Teachers' Behavior Checklist | | 0.39 | | 0.95 |
| Word Recognition Test | | | | -0.26 |

## Table 5

### Analysis of Variance, Interest - Units - Subjects Experiment

### Comparisons of Advanced Groups

| Criterion | Mean Squares | | | F Ratios | |
|---|---|---|---|---|---|
| | Method | Interaction | Error | Method | Interaction |
| **Comparison of Method A (Interests) and Method B (Subjects) (71 df for error)** | | | | | |
| Average Reading, Stanford | 19.190 | 23.294 | 13.689 | 1.40 | 1.70 |
| Spelling, Stanford | 32.016 | 17.448 | 15.166 | 2.11 | 1.15 |
| Average Arithmetic, Stanford | 0.295 | 19.477 | 16.563 | | 1.18 |
| Gray Oral Reading | 0.152 | 0.174 | 23.345 | | |
| Short Form of Chicago Test of General Information and General Comprehension | 79.791 | 26.347 | 19.613 | 4.07* | 1.34 |
| Practical Reading Test | 0.074 | 0.294 | 7.935 | | |
| Speech Checklist | 0.1708 | 0.0032 | 0.1904 | | |
| **Comparison of Method A (Interests) and Method C (Subjects) (94 df for error)** | | | | | |
| Average Reading, Stanford | 9.286 | 22.351 | 12.952 | | 1.73 |
| Spelling, Stanford | 69.929 | 14.347 | 15.970 | 4.38* | |
| Average Arithmetic, Stanford | 3.274 | 1.002 | 22.085 | | |
| Gray Oral Reading | 39.365 | 4.268 | 28.661 | 1.37 | |
| Short Form of Chicago Test of General Information and General Comprehension | 22.058 | 22.239 | 17.848 | 1.24 | 1.25 |
| Practical Reading Test | 0.122 | 0.125 | 8.792 | | |
| Speech Checklist | 0.0138 | 0.2270 | 0.2266 | | 1.00 |
| Teachers' Adjustment Rating Scale | 7.271 | 0.645 | 4.507 | 1.61 | |
| Motivation Scale, Teachers' Behavior Checklist | 26.049 | 12.030 | 9.934 | 2.62 | 1.21 |
| **Comparison of Method B (Units) and Method C (Subjects) (92 df for error)** | | | | | |
| Average Reading, Stanford | 5.578 | 0.226 | 13.137 | | |
| Spelling, Stanford | 29.610 | 71.918 | 16.857 | 1.76 | 4.27* |
| Average Arithmetic, Stanford | 5.315 | 0.573 | 22.843 | | |
| | 18.352 | 6.890 | 27.341 | | |
| Short Form of Chicago Test of General Information and General Comprehension | 84.141 | 74.092 | 17.022 | 4.94* | 4.35* |
| Practical Reading Test | 0.035 | 0.738 | 7.747 | | |
| Speech Checklist | 0.7936 | 0.0264 | 0.2318 | 3.42 | |

* F Significant at five percent level.

## Table 5 (cont'd.)

### Comparison of Primary Group

### Comparison of Method B (Units) and Method C (Interests) (38 df for error)

| Criterion | Mean Squares | | | F Ratios | |
|---|---|---|---|---|---|
| | Method | Interaction | Error | Method | Interaction |
| Average Reading, Stanford | 61.133 | 14.920 | 10.514 | 5.81* | 1.42 |
| Spelling, Stanford | 245.131 | 145.126 | 10.223 | 23.98** | 14.20** |
| Average Arithmetic, Stanford | 10.942 | 2.746 | 10.784 | 1.01 | |
| Gray Oral Reading | 138.390 | 27.099 | 16.241 | 8.52** | 1.67 |
| Short Form of Chicago Test of General Information and General Comprehension | 27.224 | 3.902 | 27.328 | | |
| Speech Checklist | 0.7125 | 0.0556 | 0.2194 | 3.25 | |
| Teachers' Adjustment Rating Scale | 13.105 | 0.368 | 10.747 | 1.22 | |
| Motivation Scale, Teachers' Behavior Checklist | 0.133 | 0.202 | 19.160 | | |
| Word Recognition Test | 0.767 | 0.286 | 21.210 | | |

* F Significant at five percent level
** F Significant at one percent level

## Table 6

### Adjusted Mean Differences between Methods A, B, and C

| Criterion | Advanced Groups<br>A minus B | <br>A minus C | <br>B minus C | Primary Groups<br>B minus C |
|---|---|---|---|---|
| Average Reading, Stanford | 0.13 | 0.06 | -0.05 | -0.21* |
| Spelling, Stanford | -0.15 | -0.19* | -0.12+ | -0.42++ |
| Average Arithmetic, Stanford | -0.01 | 0.04 | 0.05 | -0.09 |
| Gray, Oral | 0.01 | 0.13 | -0.10 | -0.32** |
| Short Form of Chicago Test of General Information and General Comprehension | 2.34* | 1.00 | -2.09+ | 1.42 |
| Practical Reading Test | 0.06 | -0.13 | -0.09 | |
| Speech Checklist | -0.11 | 0.03 | 0.20 | -0.23 |
| Teachers' Adjustment Rating Scale | | 0.58 | | 0.98 |
| Motivation Scale, Teachers' Behavior Checklist | | 1.10 | | 0.09 |
| Word Recognition Test | | | | 0.03 |

* Main Effect Significant At .05 Level
** Main Effect Significant at .01 Level
+ Method X Reading Achievement Interaction Significant at .05 Level
++ Method X Reading Achievement Interaction Significant at .01 Level

Table 7

Interactions between Method and Initial Achievement in Reading

Interests - Units - Subjects Experiment

| Initial Reading Achievement | Advanced Groups Adjusted Means-Spelling Group B (Units) | Group C (Subjects) | Interpretation of Interaction |
|---|---|---|---|
| 3.0 and above | 0.35 | 0.30 | Method C was superior to Method B for the below 3.0 readers, but the difference was not significant for the 3.0 and above readers. |
| 2.9 and below | 0.19 | 0.50 | |

| | Advanced Groups Adjusted Means, General Information and Comprehension Group B (Units) | Group C (Subjects) | |
|---|---|---|---|
| 3.0 and above | 2.24 | 2.50 | Method C was superior for the below 3.0 readers; no difference for the 3.0 and above readers. |
| 2.9 and below | -0.36 | 3.62 | |

| | Primary Groups Adjusted Means, Spelling Group B (Units) | Group C (Subjects) | |
|---|---|---|---|
| 2.0 and above | -1.30 | -0.40 | Method C was superior for the 2.0 and above readers; no difference for the below 2.0 readers. |
| 1.9 and below | 0.89 | 0.99 | |

## Table 8

## Comparison of Planned Phonetics and Incidental Phonetic Groups on Background Factors

| | Planned Phonetics Group f | Incidental Phonics Group f |
|---|---|---|
| **Sex** | | |
| Boys | 31 | 36 |
| Girls | 31 | 33 |
| **Mental Age** | | |
| 7-6 and above | 29 | 26 |
| 7-5 and below | 33 | 43 |
| **Validity of IQ Questioned** | | |
| IQ questioned | 12 | 16 |
| IQ not questioned | 50 | 53 |
| **IQ** | | |
| 67-74, inclusive | 30 | 41 |
| 66 and below | 32 | 28 |
| **Community Socio-Economic Status** | | |
| Socio-Economic Categories III or higher | 29 | 36 |
| Socio-Economic Categories I and II | 33 | 33 |
| **Coordinators' Rating of Degree to which Experimental Conditions were Maintained** | | |
| Superior | 35 | 45 |
| Excellent or Adequate | 27 | 24 |

Table 8 (Cont'd.)

| | Planned Phonetics Group f | Incidental Phonics Group f |
|---|---|---|
| **Initial Reading Achievement** | | |
| Initial Average Reading Scores 2.5 and above | 17 | 20 |
| Initial scores in Average Reading 2.4 and below | 45 | 49 |
| **Central Personality Patterns from Teachers' Behavior Checklist** | | |
| Passive, Passive-Aggressive and Aggressive | 19 | 10 |
| Other than Passive, Passive-Aggressive and Aggressive | 43 | 59 |

## Table 9

## Comparison of Mean Gains of Planned Phonics and Incidental Phonics Groups for Two Levels of IQ

| | Mean Gains | | | |
|---|---|---|---|---|
| Criterion | Planned Phonics Group | Incidental Phonics Group | df | t |
| Average Reading | | | | |
| IQ's of 67 and above | .357 | .468 | 66 | 1.074 |
| IQ's of 66 and below | .344 | .338 | 61 | 1.183 |
| Oral Reading | | | | |
| IQ's of 67 and above | .455 | .441 | 62 | .1060 |
| IQ's of 66 and below | .453 | .483 | 54 | .2129 |
| Spelling | | | | |
| IQ's of 67 and above | .350 | .295 | 68 | .586 |
| IQ's of 66 and below | .374 | .272 | 58 | 1.014 |
| Arithmetic | | | | |
| IQ's of 67 and above | .350 | .370 | 66 | .1689 |
| IQ's of 66 and below | .324 | .366 | 61 | .3488 |
| General Information and Comprehension | | | | |
| IQ's of 67 and above | 4.83 | 4.32 | 59 | .4796 |
| IQ's of 66 and below | 3.68 | 4.84 | 48 | .9477 |
| Overall Speech Ratings | | | | |
| IQ's of 67 and above | .276 | .389 | 63 | .7655 |
| IQ's of 66 and below | .393 | -.083 | 50 | 1.518 |
| Adjustment Rating Scale | | | | |
| IQ's of 67 and above | 1.567 | 1.184 | 66 | .0180 |
| IQ's of 66 and below | .7142 | .3103 | 55 | 1.7568 |

Note: No differences were significant at the five percent level.

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# THE CHICAGO TEST OF GENERAL INFORMATION AND GENERAL COMPREHENSION FOR EDUCABLE MENTALLY HANDICAPPED CHILDREN

## MANUAL AND REPORT

Cooperative Research Project SAE 6529

BOARD OF EDUCATION
CITY OF CHICAGO
1961

# THE CHICAGO TEST OF GENERAL INFORMATION AND GENERAL COMPREHENSION FOR EDUCABLE MENTALLY HANDICAPPED CHILDREN

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# THE CHICAGO TEST OF GENERAL INFORMATION AND GENERAL COMPREHENSION FOR EDUCABLE MENTALLY HANDICAPPED CHILDREN: MANUAL AND REPORT

Part III. of a six-part report on a series of researches on

HOW MENTALLY HANDICAPPED CHILDREN LEARN

UNDER CLASSROOM CONDITIONS

carried on under the terms of Cooperative Research Project No. SAE 6529, dated February 28, 1957, between the United States of America acting through the United States Commissioner of Education of the Office of Education, Department of Health, Education, and Welfare, and the Department of Public Instruction of the State of Illinois, to provide research through the facilities of the Board of Education of the City of Chicago.

Part

I. Achievement and Adjustment of Educable Mentally Handicapped Children in Special Classes and in Regular Grades

II. Teaching the Educable Mentally Handicapped Child: A Comparison of Four Methods of Instruction

III. The Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children: Manual and Report

IV. Personality Appraisal of Educable Mentally Handicapped Children: A System for Scoring and Interpreting Picture Story Tests

V. The Chicago Cooperative Research Project Practical Reading Test "Every Day Reading for Fun and Meaning:" Directions for Administration and Scoring. Second Edition.

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# The Chicago Test of General Information and General Comprehension
## for Educable Mentally Handicapped Children

Frances A. Mullen, William Itkin

and Staff of the Chicago Cooperative Research Project

| | |
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# The Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children

Frances A. Mullen, William Itkin
.and Staff of the Chicago Cooperative Research Project

## 1. Purpose and Content

### Purpose of the GICT

The Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children is an evaluation instrument devised in Chicago's Cooperative Research Project on the education of educable mentally handicapped children.[1] Its purpose is to measure the progress of educable mentally handicapped children toward the attainment of educational objectives of the curriculum not adequately assessed by already available instruments. Although intended as an achievement test, its high correlation with mental age makes it a useful supplementary instrument in diagnosis of educable mental handicap.

### Contents

The GICT consists of five subtests:

(a) Health, Physical Education, and Safety (20 items)
(b) Science (17 items)
(c) Ethical Comprehension (14 items)
(d) Social Studies (25 items)
(e) Arithmetic (20 items)

In its present form, the GICT consists of 96 items. It is individually administered, so that the scores are not influenced by reading or spelling handicaps. It takes approximately 45 minutes to administer. Its manual provides extensive lists of illustrative responses with accompanying scoring criteria.

Authorship

The idea of evaluating aspects of progress of educable mentally handicapped (EMH) children in comprehension along subject area lines not already adequately measured by commercially available instruments was Dr. Frances A. Mullen's idea. Every member of the staff participated in the development of this test either through drafting items for the original form of the test or through perfection of scoring systems.

The following members of the staff were mainly responsible for the drafting of the different subtests, as follows:

Health, Physical Education, and Safety: Eugene Richards and Berthold Demsch
Science: Willie Scarborough, Mary Cummings, and William Itkin
Ethical Comprehension: William Itkin
Social Studies: Miriam Rooney and Adele Morel
Arithmetic: Lucille Barry

In addition, the following staff members participated in the development of scoring systems for the GICT and the Ethical Comprehension Test: Philip Feiveson, Marjorie Simons, Rhoda Diamond, Mary Anne Bell, and Stanley Cabanski. Irving Brauer handled statistical operations and participated in planning.

Many persons within the school system contributed to the test. Members of a summer workshop at Chicago Teachers College in the Summer of 1957 helped to draft preliminary items intended to measure progress toward the objectives of the curriculum of the Chicago Board of Education. Constructive criticisms of a preliminary draft of the test were offered by the Director and the Supervisors of the Bureau of Mentally Handicapped Children, by consultants of the Bureau of Curriculum, and Principals and District Superintendents of the Chicago Public Schools.

Construction of the General Information and General Comprehension Test

The drafting of items of the GICT was oriented toward two major objectives: (a) coverage of content areas sampled by the test, and (b) pertinence to the attainment of major curricular objectives. The following criteria governed the writing of items for the GICT:

1. Items should be pertinent to one of the five major content areas of the curriculum, or areas of learning: i.e., (a) Health, Physical Education, and Safety; (b) Science; (c) Ethical Comprehension; (d) Social Studies and (e) Arithmetic.

2. Items should relate to the attainment of major curricular objectives, such as developing economic competence, practicing American citizenship, protecting life and health, meeting vocational responsibilities, building human relationships, enjoying wholesome leisure, or satisfying spiritual and esthetic needs.

3. Items should be attainable by educable mentally handicapped children.

4. Items should be fair to children of different cultural backgrounds.

5. Items should discriminate between different levels of maturity.

6. Items should be briefly and clearly stated.

7. Items should apply equally well to all EMH children, whether in regular grades or in EMH divisions.

The following criteria of a good test of general achievement were to govern the final selection of items:

1. A good general achievement test as a whole should have broad coverage.

2. As many as possible of the major objectives of the curriculum should be covered.

3. The different important strands or components of the curricular objectives should be represented.

4. The different developmental periods of the elementary school years should be fairly evenly covered.

The GICT did not, however, attempt to encompass the areas of Art, Music, nor the Language Arts.

Materials prepared in the Bureau of Curriculum of the Chicago Board of Education served as basic source material for construction of test items. The most useful of these source materials with respect to suggesting test items was Source Materials of the Educational Program: A Guidebook of Living and Learning Experiences. The Teaching Guide for Mathematics, Kindergarten through Junior College, (1957) was a basic source for the construction of test items in arithmetic. From these sources, a preliminary test was drawn up. The preliminary test consisted of four subtests, as follows:

1. Health, Physical Education, and Safety (29 items). Topics covered by this test included traffic knowledge, personal hygiene, public protection, nutrition, game knowledge, fire and safety precautions, first aid, and basic knowledge of physiology.

2. Science (21 items). Topics covered by this subtest were knowledge of seasons, basic knowledge of botany, zoology, physics, and weather.

3. Arithmetic (56 items). The arithmetic items were functional, or practical problems, pertaining to the objective of economic competence. They included measurement, knowledge of money, time, local travel, calendar, telephoning, and timetables.

4. Social Studies (57 items). Topics in this subtest included identification of self, family, city, state, and country, knowledge of neighborhood, knowledge of functions of agents of government, and knowledge of basic facts of American history.

These preliminary tests were administered to a sample of 75 EMH pupils, stratified roughly according to sex, age, IQ, and socio-economic status.

Tests were scored as they were administered, and examiners noted recommendations for revision and improvement of items. Item analyses and item difficulty analyses were done on each section of the test separately, and a revised edition of the test written. Item validity, representativeness of the content covered by the items, and representativeness of difficulty levels were considered in making decisions on final retention of items.

The Ethical Comprehension Test was added after administration of the other subtests was completed. The Ethical Comprehension Test consisted of 14 items. Two of the items were taken from the Stanford-Binet, others were suggested by the Hartshorne and May Studies of Deceit (1928); some were modified from items in personality inventories which seemed to fit the construct of Ethical Comprehension; others were devised to cover ethical principles not already represented. The issues represented in the Ethical Comprehension Test included the following: responsibility for one's actions, restitution, cheating, respect for property rights of others, consideration for others, respect for authority and for rules and regulations, forgivingness, honesty, and truthfulness. Since the Ethical Comprehension Test was added after item analyses of the other tests were under way, it was not included in these item analyses, but was tried out on a small number of children of different ages and mental abilities.

The first long form of the GICT consisted of 130 items, and five subtests, as follows:

Health, Physical Education, and Safety (26 items)
Science (20 items)
Ethical Comprehension Test (14 items)
Social Studies (36 items)
Arithmetic (34 items)

The test consisted in the main of information and comprehension questions, but there were a number of performance items as well. In this form, the GICT required approximately 55 minutes to administer. The test was administered to 662 EMH children, 7 to 14 years of age, with IQ's 50 to 74, inclusive, during the 1957-58 school year in a Matched-Pair Experiment conducted by the Cooperative Research Project of the Chicago Board of Education. Scoring standards were developed to minimize subjective factors in scoring, and an item analysis done.

The item analysis of the 1957-58 form of the GICT was based on two types of analyses: (a) item discrimination between high and low scoring pupils on each subtest for two age levels: 11 years 2 months and below, and 11 years 3 months and above; (b) item difficulty, as indicated in increase in percents passing for three age levels: ages 6 to 9, 10 and 11, and 12 to 14. Two additional criteria governed final retention or elimination of items: adequacy of items from the point of view of ambiguity, as reflected in scoring difficulties reported by staff members, and need for the item from the point of view of representativeness of over-all content of the test. On the basis of these analyses, 14 items were eliminated, resulting in a test of 96 items requiring approximately 40 to 45 minutes to administer.

## 7. Manual of Administration and Scoring of GICT

Directions for administration and for recording responses, criteria for scoring, and lists of illustrative correct and incorrect responses on the GICT are provided in this chapter.

### General Directions for Administration and Scoring

Take time to establish rapport with the child. To orient the child to his task, the test administrator says: "I am going to ask you some questions. You do the talking, and I'll write down what you say. You may not know all the answers, but do the best you can." Whenever possible, administer the entire GICT at one sitting. If it is necessary to interrupt the session, do so only at the end of a subtest.

Ask each child every part of every question.

Record the child's response verbatim.

Refer to the scoring manual freely during the test to determine whether the child's answers are right or wrong. Indicate by encircling the number in the plus or minus column whether or not answers are acceptable. Questions 1 and 2 of Social Studies need to be verified from school records.

If an answer is definitely wrong, do not question the child further or repeat the question to him.

If a child gives a two part answer to a question, it is scored plus if the weak part does not invalidate the correct part.

Example: Blanket smothered it. If you squeeze a fire it goes out. +

Trees grow food like cherries, apples, grapes, bananas. +

Lungs are for breathe in air and talk.+

If a child gives a two part answer to a question, one correct and one incorrect, and his response indicates that he considers both parts correct, the answer is scored minus.

Example: Candy gives you worms and makes holes in your teeth.

A correct answer should not be scored plus if it is invalidated by further incorrect statement which indicates that child really does not understand.

Examples: It evaporates. It evaporates into bugs.

George Washington was a president. The sixteenth president.

When the child's answer is ambiguous, incomplete, or unclear, try to elicit more information from him by: (1) repeating the test question verbatim; (2) saying "Tell me more about it," or "Explain what you mean."

Do not vary these expressions except for the specific instructions with respect to Social Studies questions 14, 20 and 23, which follow.

Specific Directions

Leading questions must never be asked. Directions for standardized handling of certain items follow. The examiner should adhere to these consistently.

Health, Physical Education, and Safety.

4. Add "what?" or "do what?" to the item as written if the child seems unable to comprehend the question as read.

6. Do not explain "worn out electrical cords."

8. Repeat the question, emphasizing three, if the child names two games. If the child gives only one game, do not repeat question, but go on to the next item.

11. Repeat the question if the child names two things and then stops. Put emphasis on three in second reading.

18. Emphasize "never."

Test of Science

4. The pictures of the plant series are to be marked on the reverse side with both letters and numbers, i.e.; 1 (b), 2(d), 3 (c), 4(a). Present the series in numerical order, beginning at the child's left. Record the child's response in the letter order of his arrangement.

10. The examiner reads the question and the three possible answers to the child, "Early morning, noon, or late afternoon."

Social Studies

1. Copy school record of birth date to verify child's answer.

2. Copy school record of birthplace to verify child's answer.

4. Add "theatre" or "show" when repeating the question if child gives name of a moving picture.

9. Examiner will record the particular intersection asked of the child and record, together with the child's answer, a + or - to show whether the answer is right or wrong.

14. If the child answers, "Mississippi," and this is the state he originally comes from, say, "What is the name of your state now?"

20. If the child's answer is "Tunes? ask, "What kind?"

23. If the child says, "On trees," repeat "Where?" If the child follows with "On a farm," repeat, "Where?" again.

25. Do not explain "borders on."

For the examiner's convenience, the directions in this section are repeated as notes in the appropriate places in the scoring section of this manual.

Recording Symbols

q = Question. Whenever you ask the child to, "Tell me more about it," or to "Explain what you mean," write a small q after his initial response.

r = Test question repeated verbatim.

dk = "Don't know" response from child.

nr = No response.

+ = Right answer.

- = Wrong answer.

Tempo and Spontaneous Corrections

Since this is a power test, no time limits are imposed on the child. If the child indicates a desire to reconsider questions asked earlier in the testing, he is permitted to do so. If he spontaneously corrects an answer at any time, his correction is recorded and he is given credit for a right answer.

**Test Materials used in Administration of GICT**

Twenty items of the GICT require the use of test materials. These items, in order of presentation, and the materials needed in their administration are as shown in Table 1. Certain of these materials are illustrated in Appendix B.

..................................

Insert Table 1 about here

..................................

**Adaptation to Locale**

Having been developed for use in Chicago's Cooperative Research Project, the GICT includes a number of items reflecting urban experience, and is scored with reference to Chicago, Illinois in the years 1959-1960. Four items of the Arithmetic subtests, items 17 to 20, inclusive, are of urban content. Five Social Studies questions are scored with reference to local conditions: items 4,9,10,11, and 21.

It is recommended that examiners exercise their clinical judgment in determining whether scoring criteria and illustrations in the manual may be adapted to local conditions in scoring the five Social Studies items. Substituting the name of their own locality for Chicago may be considered in Items 10 and 11 of the Social Studies Test. In Louisiana, Item 11 should be changed to read "parish" instead of County. Otherwise, Item 11 may be changed to read: "What county (or parish) do you live in?"

In rural locales, arithmetic items 17 to 20, inclusive, should be omitted until parallel questions are devised and their comparability in difficulty to the GICT items established. These four items, together, are approximately comparable in difficulty to the quartet of arithmetic items 11, 12, 15, and 16. It is recommended, therefore, that under circumstances in which it is judged that Items 17 to 20, inclusive, are not fair to subjects from another locale, they be omitted, and assigned the score obtained by a subject on Item 11, 12, 15 and 16. If local equipment can be substituted in Arithmetic Item 19, and only Items 17, 18, and 20 are omitted, pro-rating may be done against the score on Items 12, 15, and 16.

In rural locales, Social Studies Items 4, 9, 10, and 21 may have to be omitted. The score on Social Studies Items 7, 12, 20, and 25,which approximate the general content as well as the item difficulty of Items 4, 9, 10, and 21, may be used in pro-rating for the omitted items.

Scoring Manual for GICT

Health, Physical Education and Safety

1. How often should you brush your teeth?

| Correct | Incorrect |
|---|---|
| Every morning and night | With toothpaste |
| Two times a day | Once a week |
| Before and after you eat | |
| After every meal | |
| Once a day | |
| Every day | |
| At least once a day | |

2. What should you do before you cross the street?

| Correct | Incorrect |
|---|---|
| Watch the policeman | Wait till the light come on |
| Watch the lights | Wait for the red light |
| Look both ways | |
| Look and see if any cars coming | |
| Watch the patrol boy | |

(Continued on following page)

(Health, Education, and Safety Cont.)

| Correct (Cont.) |
|---|
| Look at the green light |
| Watch out for the cars |
| Look |
| Stop, look, and listen |

3. What color light tells us when to cross the street?

| Correct | Incorrect |
|---|---|
| Green | Red |
| Orange light that says "Walk" | Yellow |

4. If a stranger offers you a ride in his car you should:-

Note: Add "what" or "do what" to the item written if the child seems unable to comprehend the question as read.

| Correct | Incorrect |
|---|---|
| No | |
| Run home | You get in |
| Not take it | Write my name |
| Don't go with him | |
| Don't take it | |
| Run | |
| Call the police | |

5. Why should we be very careful with gasoline?

| Correct | Incorrect |
|---|---|
| Sometimes it explodes | Car would run out of gas |
| 'Cause set your house on fire | 'Cause it's poison |
| 'Cause it might blow up | |
| Might get burnt | |
| Catches on fire easily | |

Ambiguous: It might kill you

'Cause it's dangerous

6. Why should we be careful of worn out electrical cords?

Note: Do not explain "worn out electrical cords."

| Correct | Incorrect |
|---|---|
| Catch a fire | Blows fuse |
| Cause fires | |
| 'Cause it might shock | |
| Get a shock | |
| You could get burnt | |
| Might electrocute you | |
| Ambiguous: Start a short circuit | |
| 'Cause they're dangerous | |
| Not to let it burn too long | |
| Might kill you | |

7. In what game do you use a bat?

| Correct | | Incorrect |
|---|---|---|
| Baseball | Bounce or fly | Bat a ball |
| Soft ball | Two Men In | Ball game |
| Hard ball | Line ball | |
| Piggy | Bat and ball | |

8. Name three games in which you use a ball.

Note: Repeat the question, emphasizing three, if the child names two games. If the child gives only one game, do not repeat question, but go on to the next item.

| Correct | | Incorrect |
|---|---|---|
| Basketball | Ping pong | Ice hockey |
| Bat and ball | Names of bouncing ball games | Bounce the ball |
| Volley ball | Field hockey | |

(Continued on following page)

8. (Cont)

Correct (Cont.)

Tennis

Catch

Football

Golf

Three Ball

Names of special ball games played in gym or in the classroom, if teacher or gym teacher verifies them.

Example: Hot Potato, Bombardment

Kick ball

Baseball, League ball or Hardball

Softball

9. Why should we cover our mouth when we cough?

| Correct | Incorrect |
|---|---|
| Spread germs | 'Cause it ain't nice |
| Get germs on other people | Handkerchief over it |
| So others won't get your cold | You can catch a cold |
| 'Cause people can catch our sickness | |
| Ambiguous: Germs<br>So it won't spread | |

10. What is a good breakfast?

(Accept the first three foods named, if they represent three of the following groups.)

a. Fruit or fruit juices; vegetables or vegetable juice

b. Cereals (including grits)

c. Rolls, toast, bread, sweet rolls, doughnuts, pancakes, waffles

d. Bacon, ham, pork chop, steak, fish, sausage

e. Eggs

f. Milk, chocolate milk, cocoa, butter, cheese

g. Soup

(Continued on following page)

10. (Cont.)

| Correct (Cont.) | Incorrect |
|---|---|
| Cereal (b), eggs (e), milk (f) | Coffee, sweet roll |
| Orange juice (a), toast (c), bacon (d) | Doughnut, tea, candy bar |
| Grits (b), ham (d), eggs (e) | Syrup, pancake, bacon |
| | Pancakes (c), sausage (d), and toast (c) |
| | Oatmeal (b), and cornflakes (b), and milk (f), and orange juice (a) |

If the first three foods named by the child can be scored as a correct answer , the child should be given credit even when he goes on to mention other inappropriate foods.

Ambiguous: Food

11. Name three things we can drink that are good for us.

Note: Repeat the question if the child names two things and then stops. Put emphasis on three in second reading.

| Correct | Incorrect |
|---|---|
| Lemon juice | Pop |
| Tang | Coffee |
| Milk, orange juice, lemonade | Tea |
| Egg-nog | Beer |
| Buttermilk | Wine |
| Juice | Punch (unless explained as fruit juice mixture) |
| Chocolate milk | |
| Cocoa, Bosco, Ovaltine | |
| Hawaiian Punch | |
| Soup | |
| Water | |
| Tea or pop, if explained that taken as medication | |

(Continued on following page)

11. (Cont.)

Ambiguous: Punch
Pineapple
Grapefruit

12. Why do we put food in the refrigerator?

| Correct | Incorrect |
|---|---|
| Keep it from spoiling | So insects can't touch it |
| To keep it fresh | 'Cause it won't get hard |
| Make it cold | To keep it clean |
| To keep it frozen | |
| Ambiguous: To keep it | |
| To store it | |

13. Why isn't it good for us to eat too much candy?

| Correct | Incorrect |
|---|---|
| Get toothaches | Get worms |
| Too many cavities | Get sugar diabetes |
| Hurt your teeth | Makes you sick |
| Got to go to the dentist - teeth rot out | |
| Bad for your complexion | |
| Satisfies your appetite so that you are not hungry for foods you need | |
| Ambiguous: Candy has too much sugar | |

14. Why should we keep flies away from food?

| Correct | Incorrect |
|---|---|
| Flies have germs | Eat it |
| 'Cause they put germs on it | 'Cause they eat it |
| 'Cause they may have germs | You'll eat them and get sick |
| Flies go in garbage - carry germs | |

(Continued on following page)

5

14. (Cont.)

Ambiguous: Flies is germs
Because they're nasty
Because they're dirty
You might get some kind of disease

15. Why should you clean out a cut if you cut yourself?

| Correct | Incorrect |
|---|---|
| To make it be clean | So you don't cut yourself |
| Might have germs | 'Cause germs will get in it |
| In case of germs, you get them out | So no germs get in |
| Might have dirt in it | So it won't be bad, mustn't pick at it |
| Might have glass in it | 'Cause you could easily get sick |
| Ambiguous: Germs | Bleeding |
| So it don't get sore | Get blood poison if you don't. |
| It can get bad and you have to go to the doctor | |

16. Why is it important for us to get vaccinations or things like polio shots?

| Correct | Incorrect |
|---|---|
| Help to keep from polio | Get sick |
| So you don't get polio | For your health |
| So you won't get polio | So you don't get diseases like cancer |
| If we don't, we might get sick | |
| So you don't get crippled | |
| So you don't get diseases | |
| Ambiguous: You might get polio | |
| They help you | |

17. Why do we have fire drills in school?

| Correct | Incorrect |
|---|---|
| So if a real fire you know how to do | Because sometimes school will burn |
| In case of fire we know how to get out fast | Enemy plane might drop bomb |
| Practice so we'll know what to do for a real fire | If there is a fire, find out where you're going |
| Ambiguous: If there be a fire | Maybe school on fire |
| Help us if there is a real fire | |
| Practice | |
| So we know what to do | |

18. Why should oily rags never be left in a closet or a box?

Note: Emphasize "never."

| Correct | Incorrect |
|---|---|
| It gets hot and they get on fire | So nothing can get on them |
| From heat they can catch on fire | So oil won't get on clothes |
| Ambiguous: May catch fire | So bugs won't come |
| 'Cause they might start a fire | You could drop a lighted match in there, start a fire |
| Maybe they'll get on fire | |

19. What is the stomach for?

| Correct | Incorrect |
|---|---|
| Storage, only if explained as first stage of digestion | To breathe |
| For your food | So you can eat |
| So your food can go in | For to howl |
| Digestion | To eat |
| The food you eat goes in it | Eating |
| For food | To hold your food |
| Put your food in | |
| Ambiguous: Food | |

20. What are the lungs for?

| Correct | Incorrect |
|---|---|
| So you can breathe | To talk |
| To breathe | Keep you strong |
| The air goes in them | Coughing |
| So you can get air | Singing |

Science

1. Bob wanted to take an apple to school. Why did he wash the apple before putting it in his lunch bag? (Concept of germs and of cleanliness)

| Correct | Incorrect |
|---|---|
| Because people have been handling it | To make it pretty |
| It might have germs on it | So he can start eating it |
| To wash off germs | So you can give it to the teacher |
| Get dirt off | There could be a worm in it |
| Get harmful substances off<br>Example: Insecticides | |
| Bugs may have been on it | |
| Ambiguous: Germs<br>It could be nasty | |

2. We burn many things to keep us warm. Name two things people burn to heat their homes in winter. (Concept of fuel)

| Correct | Incorrect |
|---|---|
| Wood, coal, oil, gas, kerosene, coal oil | Paper, matches, leaves, rubber, bricks, cottons, newspapers, sticks, cardboard, stoves, oven, furnace |
| Ambiguous: Fuel<br>Coal and fuel<br>Oil and fuel<br>Electricity | Failure to name the required number |
| | Charcoal |
| | Gasoline |

3. How does the sun help us? (Concept of warmth, light; factor in growth of plant and animal life.)

| Correct | Incorrect |
|---|---|
| Makes you hot | By keeping up in the air |
| Grows plants and makes us strong | Helps us go swimming |
| If there were no sun, there would be no day | Play baseball |
| Keep you warm | |
| Gives us vitamins | |
| Dries my clothes | |
| Ambiguous: It taken the germs away<br>Gives us energy<br>Makes you healthy<br>Makes us strong | |

4. (Place scrambled pictures in front of child.) Put the pictures in the right order to show how the plant grows.

**Correct**

a b c d or d c b a

5. How do trees help us?

(As shade, concept of beauty, use in products, use in protection, food bearing, conservation of natural resources.)

| Correct | Incorrect |
|---|---|
| They give off oxygen | We can climb them |
| For a wind break | Stand under in rain |
| Sit under on hot days | |
| Help protect animals in the forest | |

(Continued on the following page)

5. (Cont.)

| Correct | Incorrect |
|---|---|
| We can make pencils and paper | |
| Keeps our yard looking good | |
| Gives you fruit or nuts | |
| Keep soil from being washed away | |
| Help prevent floods | |
| Make furniture | |
| Ambiguous: Peaches, apples<br>Keep cool<br>For houses | |

6. Name two things that plants need to make them grow.

| Correct | Incorrect |
|---|---|
| Water or rain, sun, soil, dirt, earth, care and attention, plant food and other chemicals for growth, nitrogen, oxygen, air | Mention of a plant, vegetable, etc.<br>Failure to name required number<br>Seeds, bulbs |

7. There was some ice on Mr. Smith's sidewalk. He was afraid people would fall. What would make the ice on the sidewalk melt? (Concept of melting)

| Correct | Incorrect |
|---|---|
| Sun | Sand |
| Salt or similar chemicals | Hot water |
| Warm air | Shovel it up |
| | Ashes |

8. Why do we listen to the weather report on the radio or television? (Concept of adaptation to environment)

| Correct | Incorrect |
|---|---|
| You can plan the day | To hear the news |
| So you can dress for the weather | To find out what's going on in the world |
| To be informed of impending danger | |
| Hurricane might be coming and you could get ready | |
| So you can be prepared against discomfort | |
| Ambiguous: See if it is going to be hot or cold<br>See if it's going to rain<br>It's very important to know what the weather will be | |

9. Can you name the seasons of the year for me?

| Correct | Incorrect |
|---|---|
| Winter, spring, autumn or fall, summer | Names of months of the year |
| | Seasonal holidays |
| | Sport seasons |
| | Child gives both autumn and fall without indicating that he knows they are the same season |

10. When you see the sun directly above you in the sky, about what time of the day is it: (1) Early morning, (2) Noon, (3) Late afternoon?

Note: The examiner reads the question and the three possible answers to the child : "Early morning, noon, or late afternoon."

| Correct | Incorrect |
|---|---|
| Noon | Early morning |
| Ambiguous: 12 o'clock | Late afternoon |

11. Look at the thermometer to find out how hot or cold it is. (Point to the thermometer showing 104°.) Would you go swimming or ice skating? (Examiner points to the thermometer showing -10°.) Would you see a garden with flowers and vegetables or would you see a tree with no leaves? (Examiner points to the thermometer showing 70°.) Would you see a child playing baseball or playing with a sled?

| | Correct | Incorrect |
|---|---|---|
| 104° | Swimming | Ice skating |
| -10° | Tree with no leaves | Garden |
| 70° | Child playing baseball | Playing with sled |

12. Electricity makes some things go. What are three things that are run by electricity?

| Correct | Incorrect |
|---|---|
| Electrical appliances, lights, electric trains, feeder buses, specific parts of vehicles: car lights, starter, ignition<br>Flashlight<br>Telephone<br>Ambiguous: Bus, train, car | Battery, wires |

13. What happens to water when it is placed over a very hot fire?

| Correct | Incorrect |
|---|---|
| Boils, boils away, steam, gets very hot, gets warm, it bubbles<br>Ambiguous: It dries<br>Evaporates | Puts out fire, burns out, melts, water gets like burnt |

14. John left a little water in a saucer on his desk. The next morning the water was gone. No one threw out the water. Where did it go? (Concept of evaporation.)

| Correct | Incorrect |
|---|---|
| It evaporated | The cat drank it |
| Air soaked it up | Soaked up in the plate |
| Heat made it go away | Someone threw it out |
| Air currents, wind | It leaked out |
| Sun dried it up | It wasted |
| Ambiguous: Dried up | |

15. Johnny's coat caught on fire because he got too close to a bonfire. His mother quickly threw a blanket around him and put out the fire. Why did the blanket put out the fire? (Concept of smothering flames, of lack of oxygen, of cutting off the air)

| Correct | Incorrect |
|---|---|
| Blanket smothered the fire | Maybe the blanket was thicker |
| Air was gone so fire went out | The air hit the fire and put it out |
| It suffocates the fire | Because it's wool |
| Ambiguous: 'Cause it stopped the fire | 'Cause it was wet |
| | So the cold wind would stay out |
| | 'Cause it was heavy |

16. Why is it dangerous to start the motor of a car in a garage with the windows and doors closed? (Concept of poisonous fumes and lack of oxygen)

| Correct | Incorrect |
|---|---|
| You can suffocate | You'd bump into the door and have a crash |
| Gas comes from the pipe and puts you to sleep | The car needs air |
| Gases or fumes that come from the car can poison you | 'Cause smoke would get all over you |
| Ambiguous: You might die<br>It might kill you | So the cold wind would stay out |
| | Might explode |

17. John weighs 70 lbs. Tom weighs 100 lbs. They are on the teeter-totter. Who will have to sit farther back on the teeter-totter? (Concept of weights and balances.)

| Correct | Incorrect |
|---|---|
| John-- | Tom -- |
| Because John is lighter | Jonn -- |
| If Tom moves up, then they could teeter-totter | He weighs 70 lbs. |
| He doesn't weigh as much as Tom | 'Cause he weighs 70 lbs. and the other weighs 100 lbs. |
| Tom, because he doesn't weigh as much | 'Cause he weighs 100 |
| Plus for "one who is lighter" even if child gives wrong name | 'Cause he weighs more |

Social Studies

1. When is your birthday? Note: Copy school record of birth date to verify answer. Require month and day of the month, not year.

2. Where were you born?

Note: Copy school record of birthplace to verify child's answer.

Correct

If foreign born, accept name of country.

If born in U.S.A., accept name of city or state.

Cook County Hospital is accepted. Name of hospital is correct.

County Hospital, etc. not acceptable unless name of city or name of county is also given.

Ambiguous: On Halsted

County Hospital

At home

3. Whose is this? (E's possession) and Whose is this? (Child's possession) Whose is this? (School's possession -- desk, table, etc.)

Correct

Child must correctly identify E's possession, own possession, and school's possession.

Accept for S's possession designation of self, family, or friend if article referred to has been borrowed.

Accept for school's possession : Public Taxpayer
Board of Education School

Ambiguous: The Government

4. Tell me the name of a movie you go to. Where is it?

Note: Add "theatre" or "show" when repeating the question if child gives name of a moving picture.

Check with school area directory, telephone directory or other reliable source.

Require reasonable approximation of time.

Accept name of one street when theater is located there.

Accept downtown, or the Loop, if theater mentioned is located there.

If child names more than one street on which the movie he attends is located, and one of the two streets is more than one block from the correct intersection, score minus. If theater is on a corner, and only one street is named, either front or side of theater must be located on street named for response to be scored plus. If in doubt, call the theater to verify its corner location.

5. Where do you go to mail a package?

Correct

Post Office

Mailbox, if child spontaneously explains that sufficient postage is on the package

(Continued on following page)

5. (Cont.)

Postal Station

Postman, if child spontaneously explains that sufficient postage is on package.

Ambiguous: The Drug Store (Examiner questions to see whether there is a station located in the Drug Store)

6. Where do you go to cash a check?

Correct

Bank

Currency Exchange

City Treasurer's Office

Cash trucks

Ambiguous: Store

7. Where do you go to buy a hammer and tacks?

Accept hardware store or hardware department if answer given as "department" store or any named store where this type of item might be sold.

Example: Drug Store (like Walgreen's)
Dime Store
Carpenter shop

Ambiguous: Downtown
63rd Street

8. What does a policeman do? Name at least two things. (Responses must fall into two categories)

Correct

Protect life

Protect property

Direct traffic

Arrest people for wrong doing

(Continued on the following page)

8. (Cont.)

Services to individuals

Deterrent to crime

Ambiguous: Tells cars to stop and tells them when to go. (Two functions of a policeman, but both in the same area)

9. How do you get to (main intersection about one mile from school)? How do you get downtown? (Examiner should decide upon adequacy of response.)

Note: Examiner will record the particular intersection asked of the child, and record, together with the child's answer, a plus or minus to show whether the answer is right or wrong.

10. Who is the Mayor of Chicago?

Correct

Daley (First name is not required, but if first name is given it must be correct, i.e., Richard J. Daley or Richard Daley.)

11. In what county is Chicago?

Correct

Cook

12. What is the name of the country in which we live?

Correct

United States

America

United States of America

13. Who is the president of the United States?

Correct

Eisenhower

Gen, Eisenhower

Ambiguous: Ike

14. What is the name of your state?

Note: If the child answers, "Mississippi", and this is the state he originally came from, say, "What is the name of your state now?"

| Correct | Incorrect |
|---|---|
| Illinois | Chicago, Illinois |

15. Point out the the state you live in on the map.

**Correct**

Illinois

16. Who discovered America?

**Correct**

Columbus

Lief Ericson

17. Who was George Washington?

| Correct | Incorrect |
|---|---|
| First president of United States | He cut down the cherry tree |
| Our first president | He freed the slaves |
| First president | |
| Father of our country | |
| A president | |
| General in Continental Army | |
| General in Revolutionary War | |

Ambiguous: A great man

General

18. How many stars are there in our flag?

**Correct**

48 (Prior to 1960 only)

49 Acceptable 1-3-59 to 7-4-60

50 Acceptable after 3-11-59.

19. What do they stand for?

| Correct | Incorrect |
|---|---|
| The states | Countries |
| | Cities |
| | America |

20. When you work and earn money, some of your money will be kept out of your pay check. What for?

Note: If the child's answer is "Taxes," ask, "What kind"?

Correct

Social Security

Income Taxes

Ambiguous: Taxes (Ask "What kind"?)

21. How much sales tax do we pay on each dollar?

Correct

3 cents prior to August 1, 1959; 3½ cents or 4 cents after August 1, 1959

22. Where would you find snow all year around?

Correct

Arctic

Antarctica

North Pole

South Pole

Northern Canada

Alaska

Greenland

North Scandinavia

Siberia

On top of very high mountains

On top of some mountains

Ambiguous: Where the Eskimos live

23. Where do oranges grow?

Note: If the child says, "On trees," repeat "Where?" If the child follows with "On a farm," repeat, "Where?" again.

(Continued on following page)

23. (Cont.)

| Correct | Incorrect |
|---|---|
| Accept either state, country, or type of climate<br>Where it's warm<br>Hawaii<br>Florida<br>Spain<br>Mexico<br>Texas<br>California<br>Israel<br>Ambiguous: Down South | New York<br>Tennessee<br>England<br>If two or more states or countries are given and one is incorrect, score failure. |

24. Here is a map of the United States. Show me which is North. Show me which is South. Show me which is East. Show me which is West.

Correct

North and South or East and West

Score correct if either pair is given.

25. Name one country that borders on the United States.

Child must understand meaning of word border. It is not acceptable to change the wording to touch.

Note: Do not explain "borders on."

Correct

Mexico

Canada

Arithmetic

1. Here is some money. (Examiner will give child 5 pennies, 3 nickels, 2 dimes, 1 quarter, 1 half dollar.) Can you tell me the name of this coin? (Examiner shows child the half dollar.)

Correct

Half dollar; 50 cent piece; 50 cents

2. Hand me eight coins. I will count them now, to see if that's right. (Put out in left-to-right order in front of the child.) Now point to the third coin.

Correct

Child must point to the third coin from his left.

3. Now give me seven cents.

Correct

7 cents

4. (Return it) Now give me forty-six cents.

Correct

46 cents

5. (Return it) Count all of the money I just gave you and tell me how much is there.

Correct

$1.15

6. Suppose I am looking for a birthday present to give to someone, and I find two things I think that person would like. One has a price tag with this mark on it (15¢), and the other has a price tag with this mark on it ($15). Which one costs more? (Ask the child to read both price tags to be sure that he is giving the answer because of understanding, not just chance.)

Correct

$15.00

7. Here is a ruler. How long is it?

Correct

12 inches

1 foot

8. Here is a card. (Examiner hands child a 4 X 6 index card) Measure it and tell me how long it is.

Correct

6 inches or 4 inches

9. How wide is it?

Correct

4 inches or 6 inches (Answer must be other than the one given in response to item 8.)

10. Look at this clock and tell me what time it is. (Examiner sets clock at 9:30.)

11. -- at 8:20 (Examiner sets clock at 8:20)

12. -- at 4:43 (Examiner sets clock at 4:43)

Correct

9:30 (Item 10)

8:20 (Item 11)

4:43, or 17 min. to 5 (Item 12)

13. What month comes just after the month your birthday is in?

Correct

The month after the month the child says his birthday is in. (Child may give incorrect month as a birth month.)

14. Here is a calendar. Find the month that has your birthday in it. (Orientation question -- not scored.)

What day does (or did) your birthday come on this year?

Correct

The name of the day of the week on which the child's birthday fell or will fall. (Examiner check.)

15. Do you know how many months there are in a year? How many?

Correct

12

16. Name them.

Correct

List 12 months (any order acceptable)

17. If you were sent to a doctor's office in a large downtown building and were told to go to Room 1724, what floor would you tell the elevator man you wanted to go to?

Correct

17th floor

18. A delivery man has a package to deliver to 1739 State Street. As he drives down the street he reads the numbers on the buildings, looking for 1739. He reads 1712, 1738, and 1748. Where will he have to look to find 1739?
(Examiner shows child drawing of apartment house block, illustrated in Appendix B)

Correct

Across the street from 1738

On the odd side

Child points to the side of the street opposite the even numbered side.

19. (Examiner presents phone dial to child.)

If I tell you a telephone number is State 2-1507, show me how you would dial it on the telephone. I will write the number down for you. Here it is. (Examiner writes the number in full, being sure to capitalize the "S" and "T", the other numbers small letters.)

Correct

Operation done correctly (Child must spin dial all the way to finger block.)

20. Suppose you are using this telephone to make a long distance telephone call. What number will you tell the operator you are calling from when she asks you?

Correct

Al 2-0130 or Albany 2-0130 (The phone number which appears on the dial.)

### 3. The Ethical Comprehension Test

The Ethical Comprehension Test (hereafter designated the ECT) was designed to ascertain the degree of comprehension elementary school children have of ethical principles. Some of the ethical concepts embodied in this test are:

(a) Recognition of property rights

(b) Appreciation of the essential worth of each human being

(c) Consideration for other people

(d) Recognition of the role and function of authority

(e) Personal responsibility

(f) Responsibility for the welfare of other members of society

(g) Forgivingness

(h) Honesty

Since these principles are closely related, a number of items in the ECT may be viewed from the frame of reference of more than one ethical principle. Consideration for others shows itself in many situations: in removing a broken bottle from the sidewalk; in not wishing ill to someone who has been mean to you; in not running around the schoolroom and making a noise when the teacher is not there; in coming to school on time so that others will not be disturbed. Replacing an object which one has broken and trying to locate the owner of an object which one has found shows consideration as well as respect for the property of others. Personal responsibility shows itself in many of the same situations, as well as in other situations: in coming to school on time; in making restitution for damage done; in maintaining self-control when the teacher is out of the room. Recognition of authority is manifested in obeying school rules and following school routines. Personal responsibility and consideration for others are closely related to this concept, also. Honesty is a concept manifested in many ways. It is a fundamental concept in situations such as the following: returning excess change given by grocer in error; preferring to do right rather than to have a lot of money gained wrongfully; not copying even though everyone else is copying in a test; telling the truth.

The child's understanding of a situation and his behavior in the situation may be inconsistent. The ECT aims to evaluate the understanding a child has of situations which call for ethical behavior and which are common to the experiences of most school children.

### Construction of the ECT

What real experiences in a school child's life call for comprehension of ethical issues? The answer to this question determined the type of questions used in this test. There are 14 questions in the ECT. The questions are of different levels of difficulty. Some questions require a judgment and a reason for it. Some require a judgment only. Some of the questions are recall-type questions. They require a child to tell, without cue, what action he would take in a given situation. Other questions are recognition-type questions. They require a simple choice of alternate actions already given or implied in the question. Of the 14 questions, 11 are personalized. They ask directly of the child what he would do or should do in a given situation. The varied form, the concrete approach, and the personal experiences drawn upon create rapport with the subject and minimize the danger of parrot-like responses.

### Administration of the ECT

It is particularly necessary to establish a feeling of rapport before these personal questions exploring the ethical concepts of the child are asked. The questions are asked in a conversational manner. The child's responses are recorded on the test sheet verbatim.

The examiner should read each question exactly as it is stated in the test. Further questioning is not allowed unless it is specifically provided for in the test. If the subject does not hear a question, the examiner may repeat it verbatim, but no explanation or urging through suggestions such as "Tell me more about it" is allowed.

## Scoring

In scoring, each response must be evaluated on its own merit and not in terms of any previous answer or knowledge of the child's behavior. Scoring should be done only with close reference to the scoring manual. Examiners must exercise particular care to avoid "reading into" responses concepts which are not directly expressed by the child. In scoring the ECT, the score assigned to each item should be circled in the code column to the left of the items. The number of the response equivalent to the subject's answer from the scoring manual should be written below the score.

## System of Scoring

Eleven of the fourteen questions in the ECT require subjects to make judgments and give their reasons for them. Nine of these eleven questions (Items 3,4, 6,9,10,11,12,13 and 14) require subjects to choose between given alternate courses of action. To these questions the answer required of the child is a recognition-type answer. Two questions (Items 5 and 8) require recall-type answers, plus reasons. Here the subject is asked to tell what his course of action would be, and why.

In questions requiring a judgment and a reason for it, 6 point scales (0 thru 5) are used to evaluate the child's understanding of ethical principles.

Scores of 4 and 5 are given to responses which indicate acceptable judgments or actions, plus reasons showing comprehension of a general principle.

Scores of 5 are given to acceptable judgments with reasons stated in terms of a generalization which shows that the subject's understanding of the principle transcends the bounds of the given situation.

Scores of 4 are given to acceptable judgments accompanied by reasons which are concrete and specific. The responses must indicate awareness of the ethical principle, but the reason is not generalized and remains within the bounds of the situation set up by the question. Such reasons involve a child's own experience and do not apply necessarily to all children.

For the recognition-type items, scores of 3 are given to acceptable judgments accompanied by acceptable but weak reasons. A weak reason may be a reason that shows that the correct action was motivated not by a consideration of the ethical principle, but by fear of punishment or expectation of gain.

For the recall-type items (Items 5 and 8), scores of 3 are given to correct actions even when not supported by reasons, or when supported by inadequate reasons.

For the recognition-type items scores of 2 are given to acceptable judgments unsupported by a reason or accompanied by irrelevant or inconsistent reasons. The child may fail to give a reason when asked, or may answer, "I don't know".

Scores of 2 are given for responses to recall-type items (5 and 8) which indicate that the subject acknowledges responsibility or recognizes an obligation to act, but which suggest inappropriate actions.

For both the recognition and the recall type questions, scores of 1 are given for responses which indicate uncertainty, for responses in which the subjects do not give an acceptable judgment, and for a yes or no response accompanied by a reason indicating clearly that the child did not comprehend the situation.

Scores of 0 are given for wrong responses and for complete rejection of an ethical principle.

Four point scales ( 0 to 3, inclusive) are used in Items 1 and 2. These questions require subjects to give recall-type answers telling what their course of action would be, but do not ask them to give reasons for their responses.

In items 1 and 2, scores of 3 are given for judgments indicating comprehension of the principle involved.

Scores of 2 are given for incomplete understanding of the principle.

Scores of 1 are given for responses indicating lack of comprehension of the ethical principle involved.

Scores of 0 are given for incorrect responses and for responses indicating complete rejection of ethical principles.

A 3 point scale ( 0 to 2, inclusive) is used in Item 7, which requires subjects to give a recognition-type answer (yes or no), but does not require him to give a reason for it.

In Item 7, scores of 2 are given for the correct recognition-type answer.

Scores of 1 are given for an answer indicating uncertainty.

Scores of 0 are given for incorrect responses indicating rejection of the ethical principle.

Preparation of Scorers:

An examiner should not be satisfied with the validity of his scoring of Ethical Comprehension Tests until he has studied this manual and scored and carefully checked approximately fifty protocols against the scoring standards of this manual. When any large group of Ethical Comprehension Tests is scored, consistency of scoring will be improved by scoring the protocols item by item; i.e., all protocols should be scored for item one, then for item two, for item three, and so forth. In scoring the Ethical Comprehension Test, the score assigned to an item is circled in the code column to the left of the items. Underneath the score for each item, the code number of the response in the scoring manual which is equivalent to the subject's answer is to be written. For a response to be considered equivalent to one in the manual, it should have essentially the same meaning as the response in the manual. Coding the response numbers as well as the scores for all responses assures careful attention to the manual and facilitates qualitative analysis of responses.

Interpreting Responses:

A response should be scored as a whole and interpreted in terms of the question asked of the subject. Examining the meaning of each response as a whole will give the examiner a clue to determine whether a response was intended by the subject to be a single response or a double barreled response. Interpreting the response as a whole is necessary for the examiner to determine whether a subject meant yes when he said no, or vice versa.

Scoring for Meaning:

In scoring Ethical Comprehension Test responses, elegance of expression is to be neither disproportionately rewarded nor its absence penalized. The responses in the present manual of the Ethical Comprehension Test were in the main verbatim responses given by educable mentally handicapped subjects. The particular responses given are not to be construed as a reflection upon the subject's current educational experiences, since they may have been motivated as much by the child's past life and educational experiences as by his current ones. Responses were quoted verbatim in the present manual in order to assist users of the test to interpret responses given by educable mentally handicapped children.

## Scoring Manual for Ethical Comprehension Test

1. What would you do if you broke something that belonged to someone else?

Principle: One should make restitution for damage done to the property of other people.

Score

3 Judgments indicating comprehension of the principle.

Accepts responsibility for replacing, repairing or paying for the broken item.

(1) Get them another one.
(1) Buy another one.
(1) Got to buy a new one.
(2) Give them one of mine just like it.
(3) Have it fixed.
(3) Fix it and return it.
(4) Pay for it.
(4) I'd have to go tell them about it and if they say I have to pay, I have money in the bank.
(4) Pay them or give them something else.
(5) Give them money.
(6) Tell my mother, and she will pay for it.
(6) I'd go tell 'em to see my mother about it.
(7) Tell him you'll buy another one.
(7) You go tell 'em you broke it and you'll get the money to pay for it.
(8) Have to give him something in place of it.
(8) Get him something.

2 Judgments indicating incomplete comprehension of the principle.

Recognizes the need to do something about acknowledging responsibility without actually making restitution; expresses regret.

Score

2 (1) I am sorry.

(1) Should you be sorry?

(2) I would apologize.

(3) I would go and tell the truth what happened.

(3) Tell them the truth what happened.

(3) Tell them what I done.

(3) Tell 'em that the thing broke.

(4) I would tell 'em, and if I didn't have nerve enough I'd hurry up and buy 'em another one and put it back and they wouldn't know the difference.

(5) Supposed to pay it back and if you can't pay them, say, "Excuse me, I didn't mean it."

(5) Tell them I'm sorry and if I had money I'd pay for it.

(6) Buy it.

(7) I'd try to fix it back.

(7) Supposed to pay for it.

(7) You supposed to buy them something else.

1 Judgments indicating lack of comprehension of the principle.

Fails to acknowledge responsibility for replacing or paying for item.

(1) General: No response.

(2) General: Don't know.

(3) General: Failure to comprehend the question.

(3) Make 'em pay for it.

(4) General: Failure to comprehend the issue.

(4) Tell my mother.

(4) Get a whipping.

(4) Give it back.

(4) I'll be in trouble.

(Scoring Manual ECT Cont. Item 1)

Score

1 (4) Put it in the garbage.

(4) Clean it up.

(4) Sweep it up.

(4) Pick it up.

(4) I'd bring it.

(5) General: Irrelevant statement or reason.

(7) General: Evasive answer.

(7) I might get them another one.

(7) I might fix it.

0 Incorrect responses and rejection of the principle.
Rejects responsibility for replacing item.

(1) General: Plain rejection of the principle; wrong answer.

(1) I would run away so they wouldn't know who did it.

(1) Go home.

(1) Run in the house.

(1) I'd tear it up and throw it in the garbage.

(1) Throw it in the garbage.

(2) General: Rejection of principle with projection.

(3) General: Rejection of principle with rationalization.

(4) General: Rejection of principle for material gain.

(5) General: Rejection of principle with egocentric motivation.

(6) General: Wrong answer with non-sequitur reason.

(7) General: Wrong answer with irrelevant reason.

(8) General: Awareness of meaningfulness of principle but rejection of same.

(9) General: Rejection of principle with flagrant defiance of same.

(0) General: Rejection of principle with inconsistent reason.

(Scoring Manual ECT Cont. Item 2)

2. What would you do if you found something that belonged to someone else?

Principle: One is obligated to attempt to return a lost object to its rightful owner.

Score

3 Judgments indicating comprehension of the principle.

Accepts responsibility for making constructive effort to restore item to its owner.

(1) I'd give it to the owner.

(1) Give it back.

(1) Return it.

(1) You take it to the person that lost it.

(1) Take it up to his mother.

(1) I'd give them the money.

(2) I'd turn it in to lost and found.

(2) Send it to office.

(2) I's go to office.

(3) I'd give it to the teacher.

(4) I'd try to find the owner, and give it to him.

(4) I'll go and tell 'em is it theirs.

(4) Find who it belongs to.

(4) I would ask who owns it - if no one give it to my mother.

(4) Put it in the newspaper (ad) and take it to someone that can find owner of it.

(4) I'd run an ad in the paper. If no one claimed it I'd keep it.

(4) I'd try and give it back to them. I got enough toys myself.

(4) Ax who it belongs to.

Score

3 (4) I'd find out who it belonged to. If it had a name on it I'd call 'em up and give it to 'em. If it didn't have a name on it I'd keep it.

(4) Ask somebody did it belong to them.

(4) Ask 'em, "Is this yours"?

(4) If it's money, I try to ask him how much he lost and if he tell me the right thing - I give it to him.

(7) If you couldn't find the owner, go to the police.

(7) Call the police.

(8) If I found the one it belonged to, I'd give it back.

(9) Ax whose was it and if they said I could have it I'd keep it.

2 Judgments indicating incomplete comprehension of the principle.

Recognizes that the finder does not have the right to keep article but not clear about returning it.

(1) I'd return it if I know who owns it. If I don't, I keep it.

(2) Put it back.

(2) Just leave it out there.

(2) I wouldn't ever touch it.

(3) If I know who it belong to I'd give it back to him.

(4) If I knew it, I'd take it to 'em.

(5) If it had a name on it, I'd return it.

(6) You're supposed to give it back.

(7) Bring it to their house and ask if I could have it.

(8) Put it in a mail box.

(9) Give it to somebody.

(9) Run in the house and tell your mama.

(9) Go home and tell your mother you found something.

(Scoring Manual ECT Cont., Item 2)

Score

1 Judgments indicating lack of comprehension of the principle.

Fails to return property to its owner.

(1) General: No response.

(2) General: Don't know.

(2) I don't know.

(3) General: Failure to comprehend the question.

(3) No - don't know reason.

(3) You stole it.

(3) I think it belong to baby.

(4) General: Failure to comprehend the issue.

(4) Don't know whose it is - be yours.

(4) Wait till somebody come along and asks for it and ask 'em if that was theirs.

(4) Give it.

(4) If I didn't know who it was I'd keep it.

(4) If I didn't know the person I'd keep it.

(4) Pick it up.

(4) If they asked I would give it to them.

(4) I'd keep it because I don't know who it is.

(5) General: Irrelevant statement or reason.

(6) General: Perseveration from previous question.

(6) We should find it. We should put it back together nice.

(7) General: Evasive answer.

Score

0 Incorrect responses and rejection of the principle.

Rejects responsibility for returning object.

(1) General: Plain rejection of principle; wrong answer.

(1) Keep it.

(1) Some kids say they keep it (q) A lot of times I just give it back.

(1) Depends if somebody sees me find it.

(1) You sometime pick it up and keep it or sometime you give it back.

(1) I'd tear it up.

(2) General : Rejection of principle with projection.

(3) General: Rejection of principle with rationalization.

(4) General: Rejection of principle for material gain.

(5) General: Rejection of principle with egocentric motivation.

(6) General: Wrong answer with non-sequitur reason.

(7) General: Wrong answer with irrelevant reason.

(8) General: Awareness of meaningfulness of principle, but rejection of same.

(9) General: Rejection of principle with flagrant defiance of same.

(0) General: Rejection of principle with inconsistent reason.

3. Should you make fun of someone who can't do things as well as you can?

Tell me why.

(If child says "Because", ask, "Because why"? but do not press too hard.)

Principle: One should recognize the essential worth of each human being.

Score

5 Acceptable judgments with reasons stated in terms of a generalization that goes beyond the bounds of the specific situation and is clearly related to the principle.
Statement of principle of the Golden Rule.

(1) No. You should treat others as you would want them to treat you.

(2) No. A person does not have to be perfect to be worthy of respect.

(3) No. You should help people who need help.

(4) No. Because, well, everyone can't do everything and maybe that's the way they were born.

(5) No. 'Cause you might get in that condition and you wouldn't want anyone laughing at you. You should treat every man equal.

4 Acceptable judgments with reasons indicating that S empathizes or that S is aware of the ethical principle, but which is not generalized beyond the bounds of the situation set up in the question.

(1) General: No, because the other person may be able to do something you cannot do.

(1) No. He can do something better than I can.

(2) General: No, because it would hurt his feelings.

(2) No. You'd hurt his feelings.

(2) No. 'Cause that'll make them sad. They'll wish they could do it.

(2) I won't make fun of 'cause they don't like to be aggravated.

(2) No. (q) 'Cause they get nervous.

(3) General: No, because it might happen to you.

(3) No. (q) 'Cause the same thing could happen to you.

(3) No. Maybe the next morning you can't do.

Score

4 (3) No. You might be that way some day.

(3) No. Because accident may happen to me.

(3) No. Because I might have been like that myself.

(3) No. Something might happen to you one day.

(3) No. I'd feel sorry for 'em. Sometimes you might not know how to do something and you'll need someone.

(3) No. So my mother tell me never make fun out of people. Some day I may have children and they may not be able to do all things.

(4) General: No. I wouldn't want him to laugh at me.

(4) No. If I was that way I wouldn't want him to make fun of me.

(4) No. You shouldn't. Because you wouldn't want nobody to make fun of you if you couldn't do something.

(5) General: No. You should be helping him.

(5) No. You should try to help 'em so they can do it just as well as you can.

(5) No I won't laugh. I'd show 'em how to do it.

(5) Help them. (q) I said help 'em.

(6) General: No, you should not, because although he may not know how to do something at the time, he may be capable of learning how to do it.

(6) No. Because the other person - see if you could swim and he can't swim - don't mean you could laugh at him 'cause he could learn to swim.

(6) No. Because someday you can do what other persons do.

(7) General: No, because maybe you are not so good yourself.

(7) No. 'Cause you might can't do it yourself.

(7) No. 'Cause maybe you can't read or something.

(7) No, You can't always do as well as other people.

(7) No. Maybe I can't do better than he can.

Score

4 (8) General: No. Because you might make the same mistake.

(9) General: No. If it happened to you, you would know how it feels.

(9) No ma'am. Maybe one day you won't be able to do it and you'll be made fun of.

(0) General: No, if he were to improve and you lost your skill, you would not want him to laugh at you.

(0) No. Because if he gits all right and something happen to you and it be the same thing that happen to him he would laugh at you and you wouldn't like it.

(01) General: No. Because they can't help it.

(01) No. 'Cause they might not know how.

(01) No. It's not his fault if he can't do stuff like you can.

(01) No. 'Cause you got to learn first.

(01) No. 'Cause they gotta try and learn how to do it.

(01) No. 'Cause it feels sad and you shouldn't laugh because when they was a little girl or boy shouldn't know how to write and read.

(01) No. Because maybe they weren't just as lucky as you were.

(01) No. He might just can't do it.

(01) No. Because you could do it and he can't.

(01) No. There could be something wrong with them --crippled of something.

(01) No. If he can't run as fast as you it's not his fault.

(01) No. 'Cause they might be a new boy.

(01) No ma'am. (q) 'Cause maybe they could be fat and you not so fat and you could do it and they can't do it.

(01) No ma'am. (q) Because supposin they're not able, they're not as strong and healthy. Not as fortunate as you are.

Score

4 (01) No. (q) Well, because if they were sick they couldn't do the things we could do.

(01) No. 'Cause they don't know how to write in school.

(01) They don't know anything and someone else do.

(01) No. 'Cause person can't do it; 'cause can't read so good.

(02) General: No, because he can only do his best.

(02) Not supposed to. 'Cause everyone is supposed to do the best they can.

(03) General: No, because you are not the only one who knows how to do things.

(03) No. 'Cause you ain't the only one who could do it.

(03) No. 'Cause there are others who can do better than you can and you have no room to talk.

(04) General: No. That would discourage them and make them give up.

(04) No, ma'am. (q) You make 'em mad or either they wouldn't do it at all.

(05) General: They may do something else good and you don't know they can do it.

3 Acceptable judgments accompanied by weak reasons. Reason may indicate that the responses were motivated not by consideration of the ethical principle, but by a desire to avoid harm to himself, by expediency, or propriety.

(1) General: No, that is nothing to laugh at.

(1) No. It isn't funny.

(1) I wouldn't make fun of them. If they couldn't do it so why should I make fun of them?

(1) No -- just 'cause you can learn better than them that ain't nothing to be laughin at.

(1) No. Because it no good to set and be crippled.

Score

3 (2) General: No, that is only a reflection on yourself.

(2) No. Shows you're dumb and stupid.

(3) General: No, and I don't want him to laugh at me.

(4) General: No, he might retaliate physically or get you into trouble.

(4) No, 'Cause you might get hurt.

(4) Don't laugh at 'em; 'cause they'll call their mother up.

(4) No.-- because they may have a.brother and brother may get you.

(4) Because they will cry and tell their mother.

(5) General: No. 'Cause if I make fun, all others will make fun.

(6) General: No, he would retaliate.

(6) No. They'll start making fun of me.

(6) No, ma'am, he do it to you sometime.

(6) No. They'll feel bad and maybe one day they'll make fun of you.

(6) No. They don't know what they're doin. If you make fun of them they'll make fun of you.

(6) No. If you do then they'll make fun of us.

(8) General: No, not the proper or the socially approved thing.

(8) No. (q) It isn't right to make fun of people.

(8) No. It ain't fair-- ain't nice.

(8) No. (q) It's not nice.

(8) Not nice to make funny of people.

(8) That would be wrong.

(8) Not right .

(8) Not nice.

(8) No. That would be wrong.

(8) No -- you should not --'cause God does not want you to.

(Scoring Manual ECT Cont. Item 3)

Score

3 (8) No -- It's a sin.

(8) No -- Because just because you can do things other peoples can't don't make you make fun of them.

(8) No. 'Cause it's very unrude.

(9) General: One should not tease smaller children.

(9) No --they're littler.

(0) General: No, it will make them angry.

(0) No. 'Cause it makes 'em kinda mad.

(01) General: No, you would lose their friendship.

(01) No --Because they'll get mad and then you can't be friends again.

(02) General: No. Person in authority will punish.

(03) No. Heaven will punish.

2 Acceptable judgments without reasons or with irrelevant or inconsistent reasons.

(1) General: Acceptable judgment without further elaboration or "Don't know"

(1) No.

(1) Everybody around here can do things as well as I can. (q) Don't know.

(1) No. 'Cause . I don't know.

(2) General: Acceptable judgment with virtual repetition of question; i.e.; shouldn't, etc.

(2) No. 'Cause we could do things that they can't do.

(2) No -- You're not supposed to.

(3) General: Acceptable judgment with irrelevant reason.

(3) No. Because my brother does that. (q) I don't know why.

(3) No. I don't like to make fun of 'em.

(Scoring Manual ECT Cont. Item 3)

Score

2 (3) No. 'Cause you might can do something better than they can do.

(3) No. 'Cause they can laugh.

(4) General: Acceptable judgment with bizarre response.

(5) General : Acceptable judgment with inconsistent reason.

(5) No. Because if we make fun of them they may be able to do something you can't.

(6) General: Acceptable judgment with perseveration from previous question.

(7) General: Acceptable judgment with meaning unclear, or incomprehensible.

(8) General: Acceptable judgment with reason indicating failure to understand inquiry.

(9) General: Acceptable judgment with untrue reason.

(9) No. It give you bad luck.

1 Uncertain

(1) General: No response.

(2) General: Don't know.

(2) I don't know.

(3) General: Failure to comprehend the question.

(3) The other people.

(4) General: Failure to comprehend the issue.

(4) Yes. Because I can help him.

(4) Yes. Because you might learn him.

(5) General: Irrelevant statement or reason.

(6) General: Perseveration from previous question.

(6) No --'Cause may have to sweep it.

(7) General: Evasive answer.

(Scoring Manual ECT Cont. Item 3)

Score

0 Yes, with wrong response indicating that subject rejects the ethical principle.

(1) General: Plain rejection of principle; wrong answer.

(1) Yes.

(1) Uh-huh (q) No.

(2) General: Rejection of principle with projection.

(3) General: Rejection of principle with rationalization.

(4) General: Rejection of principle for material gain.

(5) General: Rejection of principle with egocentric motivation.

(6) General: Wrong answer with non-sequitur reason.

(7) General: Wrong answer with irrelevant reason.

(8) General: Awareness of meaningfulness of principle, but rejection of same.

(9) General: Rejection of principle with flagrant defience of same.

(9) Yes. It's fun to tease.

(9) He'll get mad.

(9) I'd beat him up.

(0) General: Rejection of principle with inconsistent reason.

PRECEDING PAGE MISSING

Score

4 (1) Yes. If you don't you might get runned over and it ain't gonna be the patrol boy's fault.

(2) Yes. (q) Because if you don't you might get reported or hit.

(3) Yes. You be crossin the street and car be comin -- patrol boy tell you to stop -- you supposed to stop.

(3) Yes. Because if a car comes and he tells you to stay back you supposed to stay.

(3) Yes. To go to school you cross when he says.

(4) Yes, for your own good.

(4) Yes. To protect yourself.

(5) Yes. 'Cause you obeying school laws.

(5) Yes. Because that's the school regulation.

(6) Yes. Because he's up there to control traffic. Something might happen to you.

(6) Yes. (q) 'Cause he try to stop fights, try to help you. Just like police.

(6) Yes. Because he guides you across the street.

(6) Yes. Because they have to keep kids off the street.

(6) Yes, ma'am. (q) 'Cause they supposed to help you across the street.

(7) Yes. 'Cause guy with a belt means safety. He try to do his best.

(8) Yes. He's telling you right.

(8) Yes. Because if he says to cross the street no cars are coming.

(9) Yes. He is better trained than you.

(9) Yes. Because kids don't know how to cross the street.

(9) Yes. Because he knows more than us.

(9) Yes. Because he's a patrol boy and he knows what's best for you.

(0) No, you don't have to do everything -- but you have to cross street when he tells you -- because he's helping you.

(01) Yes. Because maybe you can get killed and it will be his fault.

Score

4 (01) Yes. 'Cause if you get hurt it will be his fault.

(01) Yes. You might get hit and he would be responsible.

(01) Yes. 'Cause it will be the patrol boy's fault if a car hits you.

(02) General: Delegation of authority by an agent of society.

(02) Yes. He is just like a policeman.

(02) Yes. He works for the school.

3 Yes, with a weak reason. Reason may be expediency, propriety, fear or punishment or expectation of gain.

No, when partially but inadequately explained in terms of limits of authority.

(1) Yes. So you won't get yelled at.

(1) Yes. He'll accuse you and hit you.

(2) Yes, if you big you do right so little kids do what you do.

(3) Yes. Because it's the rules.

(3) If he's a lieutenant or captain. (q) It's the right thing.

(4) Yes, he tells you to wait for the light.

(5) No. Not really. Not all his orders.

(6) No, If he told me to skip school I wouldn't listen to him.

(6) No. 'Cause maybe they'll tell you to do something you're not supposed to do.

(7) Yes. He'll report you.

(7) Yes. If you don't listen he'll take you up to the principal.

(7) You might get suspended.

(7) Yes. Get reported.

2 Yes, without reason or with poor or irrelevant reason.

(1) General: Acceptable judgment without further elaboration, or don't know.

(1) Yes.

(Scoring Manual ECT Cont. Item 4)

| Score | |
|---|---|
| 2 | (1) Yes. (q) I don't know. |
| | (2) General: Acceptable judgment with virtual repetition of question; i.e., shouldn't, wrong, right, etc. |
| | (2) You're supposed to. |
| | (2) Yes, you have to obey him. |
| | (2) Yes, it's important. |
| | (2) Yes. 'Cause they want you to stay on the corner. |
| | (3) General: Acceptable judgment with irrelevant reason. |
| | (3) Yes. Because it's raining. |
| | (3) Yes. That is why the patrol boy tells you to stay and go. |
| | (3) Yes. 'Cause he mean it. |
| | (3) Yes. You can learn more better. |
| | (4) General: Acceptable judgment with bizarre response. |
| | (5) General: Acceptable judgment with inconsistent reason. |
| | (5) Sometimes. Sometimes he's wrong and sometimes he's right. |
| | (6) General: Acceptable judgment with perseveration from previous question. |
| | (7) General: Acceptable judgment with meaning unclear or incomprehensible. |
| | (7) Yes. When you go cross street - car can - . |
| | (8) General: Acceptable judgment with reason indicating failure to understand inquiry. |
| | (9) General: Acceptable judgment with untrue reason. |
| 1 | Uncertain or irrelevant answer. |
| | (1) General: No response. |
| | (2) General: Don't know. |

(Scoring Manual ECT Cont. Item 4)

Score

1 (3) General: Failure to comprehend the question.

(3) You go across the street.

(4) General: Failure to comprehend the issue.

(5) General: Irrelevant statement or reason.

(6) General: Perseveration from previous question.

(7) General: Evasive answer.

0 No, with rejection of the principle.

(1) General: Plain rejection of principle ; wrong answer.

(1) Yes 'lil kids should - if you're big maybe no.

(1) No. Don't know.

(2) General: Rejection of principle with projection.

(3) General: Rejection of principle with rationalization.

(3) No -- if you do what he say he might play a trick on you.

(4) General: Rejection of principle for material gain.

(5) General: Rejection of principle with egocentric motivation.

(5) No don't have to do it. Just because you don't want to do what he say.

(6) General: Wrong answer with non-sequitur reason.

(7) General: Wrong answer with irrelevant reason.

(8) General: Awareness of meaningfulness of principle but rejection of same.

(8) No. 'Cause if you don't want to you don't have to. You're supposed to though.

(8) No -- but it's safer.

(9) General: Rejection of principle with flagrant defiance of same.

(9) No. 'Cause I can beat him up.

(9) No. Because nobody tells me what to do.

(9) No one bosses me around.

(0) General: Rejection of principle with inconsistent reason.

(0) Not if you don't want to. 'Cause a car might run over you.

(Scoring Manual ECT Cont.)

5. What should you do if you see a broken bottle lying on the sidewalk?

Tell me why.

Principle: One is responsible for the welfare of his fellow man.

Score

5 Acceptable judgments with reasons stated in terms of a generalization which shows that the subject's understanding of the principle transcends the bounds of the given situation. Effectively removes object and gives response expressing consideration for others.

(1) Put it in the garbage can so no one will get hurt.

(1) Pick it up,put it in the garbage. Someone could cut themselves.

(1) Pick up and put it in the garbage can; because somebody may come by and fall and cut themselves.

(1) Take it up and throw it in the garbage. Somebody could step on it and get cut.

(1) Supposed to take it and put it in the garbage. Somebody with bare feet might come along and step on it and cut they feet.

(1) Take it over to incinerator 'cause somebody might just be running and have on gym shoes and it go through it.

(2) Pick it up carefully. Someone might fall and cut themself.

(2) Pick it up, because someone can come by and cut themself.

(3) Clean it up. If you don't clean it up, maybe somebody will cut theirself.

(3) Clean it up. 'Cause somebody might come along with no shoes on and get cut.

(3) Take it off. 'Cause it might cut someone's feet.

(4) Sweep it up. Cut someone.

(4) Sweep it up, so nobody will cut himself.

Score

5 (5) Put it somewhere where nobody will get hurt.

(6) Put it in container so bike won't get a flat.

(6) Put it in the garbage, a car could get a flat tire.

(7) Get down and pick the glass up. Because if a bike be goin it will get a flat tire.

4 Actions not effectively removing object, accompanied by reasons which are concrete and specific.

Actions effectively removing object, accompanied by weak reason. .

(1) Kick it off; someone can fall and cut themselves.

(1) Knock it off the sidewalk; someone cut himself.

(1) Kick it on side, so no people won't step on it.

(1) Carry it around on other side of school yard and throw it away 'cause somebody might hurt they foot on when they runnin.

(1) Put on some gloves if you're going to get it off. Someone else might cut themselves.

(1) You should push it aside or if there's a container put it in so nobody step and cut theirselves.

(1) Push it into grass or dirt and put dirt all over so people won't cut hole in shoe or cut feet.

(1) Dig a hole and bury it. Because if somebody come over it they will cut themselves.

(2) Pick it up. (q) 'Cause it's dangerous.

(3) Pick it up and throw it away.(q) 'Cause some little kid might come along and play and might get their hands cut.

(Scoring Manual ECT Cont. Item 5)

Score

4 (3) Pick it up and throw it away. Somebody might step on it and cut themselves.

(4) Pick it up. Some little boy may put it in his mouth and cut hisself.

(5) Put it on the side. 'Cause the cars would get a flat tire.

(5) Move it aside. It might - cars might get a flat.

(5) If I had a broom I'd sweep it up so if a car come by won't get no busted tire.

(6) Take bottle and put it in garbage; then a boy coming and can break his leg.

(6) You'd pick it up and throw in garbage can. Isn't nice to leave it out on the sidewalk; people can trip.

(7) Pick it up and put in garbage can. (q) If somebody rides a bike or roller skating they might trip over it.

3 Removes object, but gives a poor reason, or no reason, or reason which shows concern only for self, rather than others.

(1) Pick it up. Throw it away. (q) You might fall on it and cut yourself.

(1) Kick it out, so you won't step on it.

(1) Pick it up. You can cut yourself.

(1) Just kick it off; 'cause you could cut yourself.

(2) Pick it up and put it in trash. You got to be careful.

(2) Pick it up and put it in trash can. Gotta be careful.

(3) Sweep it up. It looks junky on the sidewalk.

(3) Pick it up, put it in garbage can but I don't pick up glass in my hand. Makes streets look neater.

(Scoring Manual ECT Cont. Item 5)

Score

3 ((4) Pick it up and throw it in garbage can, cause you supposed to keep Chicago clean.

(4) Pick it up. Get paper and wrap it up so you won't cut yourself.
(q) So you can keep the city clean.

(6) Put it in the garbage can.

(7) Sweep it up.

(7) Sweep it out.

(8) Put it in the waste basket. (q) I don't know.

(8) Pick it up and throw it in the garbage can. Don't know.

(9) Kick it off.

(9) Throw it away.

(0) Up. Somebody else could fall.

(01) General: Correct response with reason not pertinent to issue.

(01) Sweep it up. It's time the alley was cleaned anyway.

2 Recognizes need to do something, but not clear about course of action or suggests inappropriate action.

(1) I'd kick it in the street.

(2) Throw it in the alley. Somebody might step on it and hurt their feet.

(2) Pick it up.and throw it in alley. Because maybe someone get their foot cut.

1 Uncertain or irrelevant answer indicating that the subject did not comprehend the issue.

(1) General: No response.

(2) General: Don't know.

(3) General: Failure to comprehend the question.

(3) Stick through your feet and blood be coming out.

(4) General Failure to comprehend the issue.

Score

1 (4) I'd take it home and get some glue and glue it on so if I want the bottle to go to the store we could buy a bottle of pop.

(4) If we see the broken bottle on the sidewalk will get cut.

(5) General: Irrelevant statement or reason.

(6) General: Perseveration from previous question.

(7) General: Evasive answer.

0 Leaves bottle with selfish or malicious reason; rejection of the principle.

(1) General: Plain rejection of principle; wrong answer.

(1) Leave it there. (q) Not asked.

(1) Step around it to keep from stepping on it.

(1) Walk around it.

(1) Step over it.

(1) Do notin'. (nothing)

(2) General: Rejection of principle with projection.

(3) General: Rejection of principle with rationalization.

(3) Leave it so you won't get cut.

(3) Leave it there; might cut yourself.

(3) Leave it there; because I didn't put it there.

(3) Walk on the other side. (q) 'Cause you get cut.

(3) You would leave it there. You don't know who had it. So you won't cut yourself.

(4) General: Rejection of principle for material gain.

(5) General: Rejection of principle with egocentric motivation.

(6) General: Wrong answer with non-sequitur reason.

(7) General: Wrong answer with irrelevant reason.

(8) General: Awareness of meaningfulness of principle, but rejection of same.

(9) General: Rejection of principle with flagrant defiance of same.

(9) Leave it there so someone will get a flat tire.

(0) General: Rejection of principle with inconsistent reason.

6. Is it wrong for a child to come late to school? Tell me why.

Principle: Punctuality is important for institutions to function effectively and is evidence of one's acceptance of responsibility to himself and others.

Score

5 Yes, with a reason stated in terms of a generalization transcending the bounds of the present situation, explained in terms of consideration for others or of responsibility to self.

(1) Yes, you would disturb others by coming late.

(2) Yes, a pupil who comes to school late upsets the teacher's program.

(3) Yes. Because any place you go there's a right time you need to be there. If people don't be there to play their part whatever was planned won't work out right.

(4) Yes. Because you won't learn nothing.

(4) Yes, he should be on time to get all the instruction.

(4) Yes ma'am. (q) Because if you come late to school and other kids be doing their work, you missin some of your education.

(4) Yes ma'am. (q) You miss your work that way.

4 Yes, with reason not generalized and remaining within the bounds of the situation as given, or no, when explained in terms of an unavoidable emergency.

(1) I come lots of time late. It isn't good. When you are late you miss your work in the morning.

(1) Yes, Because he misses class.

(1) Yes. He'll be late for his work.

(2) No, in an emergency he might be late, but it is better to come late than not at all.

(3) Yes. May miss part of "they" lesson.

Score

4 (4) Yes. They be missin something and she have to go all over it and show him the work.

(4) Yes. Because the teacher be startin and have to 'splain it all over.

(4) Yes, if you have library teacher it would be wrong to come late 'cause she have to stop the story.

(5) Yes. (q) Because you wouldn't hear what the teacher tells the rest of the kids and you'd get left out.

(5) Yes. (q) Because you wouldn't get your work done. And you wouldn't hear what the teacher tells the rest of the kids and you'd get left out.

3 Yes, or yes understood in terms of total response, with a weak reason or a reason motivated by fear of punishment or avoidance of trouble.

No, with a simple explanation of an exception under which tardiness would be allowable.

(1) General: One should be on time unless he has a good excuse.

(1) Yes, if no excuse.

(1) No. Sometimes it's not their fault.

(1) In a way it is - - if he was to come late all the time -- if just once might have a very good reason -- late every day -- yes -- just like ditchin school.

(2) General: If one is late, it is usually due to his own negligence.

(2) If he's playing around and not getting there on time every day, it is wrong. (q) 'Cause he had been playin around.

(2) Yes, because he was goofin' around and that. (I repeat.) Don't know.

Score

3 (2) Yes.'Cause, well, 'cause they can help from being late.

(2) Yes. He might stay up late watching T.V.

(2) Yes — they're supposed to watch the clock and listen to the time.

(2) No. When playing around,it is.

(2) Yes, child may be outside playing.

(2) Yes,ma'am. Because if don't get enough sleep - - supposed to go to bed at 8 o'clock and get up about 7. No reason to be late.

(3) General: Unfavorable direct classroom consequences because of late start on specific assigments.

(3) No.'Cause everybody else be doin their work and he'll have to start late and everybody'll be finished.

(3) Yes ma'am, 'cause they'll be late and not know what happened.

(3) Sometime because she may be late eatin breakfast. (q) Yes ma'am. (q) Because the other kids will be up in their work.

(3) Yes. Like because kids are doin their work — you should always be on time.

(3) Yes. Teacher wants to make sure everybody is here.

(4) General: One should come to school on time, because the class will not wait for latecomers..

(4) Yes, he's supposed to be here on time 'cause they start class.

(4) Yes. They should be on time with others — it wouldn't be right.

(4) Yes. You be tardy — they gotta be there before books take up.

(4) No, if you're late your friends may be at the movie and you won't know where they are at.

(5) General: It is a rule.

(5) Yes, he shouldn't be late 'cause it's a rule.

Score

3 (6) General: School authority so directs.

(6) Yes, teacher said not supposed to.

(7) General: Yes, to avoid disciplinary consequences.

(7) Yes. You be marked tardy.

(7) Yes. You'll get bad marks on your report cards.

(7) Yes. He'll have to go to office.

(7) No. When they come they get a check.

(7) No, the teacher will fuss at him.

(7) No. Teacher'll tell you to go down to the room and get a tardy slip.

(7) No. You might have to stand up or stay after school.

(7) Yes. Might get in trouble, if you don't bring a note, you might get suspended.

(7) Yes. Got to go back home.

(7) Yes.'Cause they have to bring a note.

(7) Yes. 'Cause the doors will be locked.

(7) No.'Cause if you get late you go down to principal.

(7) Yes. The teacher's always tellin 'em to come on time. If they don't, they have to write 500 time, "I will come to school on time."

(7) Yes. Because you might be absent and if you come 4 times might have to stay home until 9 weeks.

(7) Mumm Humm. Teacher send him back home and he doesn't want to go back home and he start cryin.

(7) No. They can get reported. Might get picked up.

(Scoring Manual ECT Cont. Item 6)

Score

3 (8) General: Yes. Coming to school late is bad training for future vocational adjustment.

(8) Yes. 'Cause like when you get a job the man will think you come late all the time.

(8) Yes, if she gets a job she can't be going late every day; they'll fire her.

(8) Yeah -- It's wrong cause he know he have to learn to get along with people so he can get a job.

(9) General: It is all right to come late if one has an adequate excuse from home; otherwise not.

(9) Sometime and sometime not. (q) If you have a note and your mother know you late it's OK.

(0) General: Not if one has something urgent to take care of for the home.

(0) No. If you have a reason if you have to go some place.

(0) No. Mother may send him somewhere.

(0) No. 'Cause his mother oversleep else he could of gone to the store or got back late. Store was too far and he tried to make it and he came back with the groceries and he was late.

(0) No, he have to go to the store.

(01) General: Not if something unusual happens to delay transportation.

(01) No. The bus might break down.

(01) No. Well if he — well maybe miss the bus—couldn't help it.

(02) General: It is safer to come to school on time.

(02) No. Because on the corner is no patrol boy. If you hurry and start to run a car can hit you.

(02) Yes, someone might grab you, and your mother would think you're in school.

(02) Yes, otherwise if something happens, you got witnesses.

(02) Yes, something might happen to you.

(03) General: No, because if one missed school entirely to avoid being tardy, one would not learn much.

(03) No. If she didn't come back to school she wouldn't learn much.

(04) General: Two reasons — would miss special classroom duty and would be punished.

(04) Yes--'cause maybe the teacher has something special for you to do or you can get in trouble if you come late.

(05) General: Yes, because your teacher may think you are going to be absent.

(06) General: Sometimes there are unforseen and uncontrollable circumstances.

(06) General: Not all the time. (q) It may be rainin'and thunder coming he has to come late.

(06) General: Yes, but sometime can be late. Can't help it.

(06) General: If you tardy you may be sick.

2 Yes with irrelevant reason or yes, understood in terms of total response; no reason, or yes, I don't know.

(1) General: Acceptable judgment without further elaboration, or don't know.

(1) Yes.

(1) Yes. I don't know.

(2) General: Acceptable judgment with virtual repetition of question,i.e., should'nt, wrong, right, etc.

(2) Yes, cause their mother supposed to get'em up early.

(2) Yes. You oughta be early.

(2) No - 'Cause he's late.

(2) Yes. You are supposed to.

(2) Yes. Because you're supposed to be on time.

(2) Yes,ma'am. Because if you come home late from school your mother would be worried about it. You posed to come to school on time.

(2) No-- You gotta be on the first bell--then when it's 2 times 'trol boys come in --That's the tardy bell.

(2) No,ma'am. He get up early; he get up when mother tell him to, and when bell ring come to school.

(2) No, they'll supposed to be at school on time.

(2) No, I mean that it's wrong to be late 'cause you should come on time.

(3) General: Acceptable judgment with irrelevant reason.

(4) General: Acceptable judgment with bizarre response.

(5) General: Acceptable judgment with inconsistent reason.

(5) Yes. 'Cause the clock stopped.

(6) General: Acceptable judgment with perseveration from previous question.

(7) General : Acceptable judgment with reason which is unclear or incomprehensible.

(8) General: Acceptable judgment with reason indicating failure to understand inquiry.

(8) Yes. Because sometimes they don't come till recess time.

(8) Yes. Teacher has to look in the book and see if he's late or not.

(9) General: Acceptable judgment with untrue reason.

(Scoring Manual ECT Cont. Item 6)

Score

1 Uncertain, or yes or no with reason indicating that the subject did not comprehend the question.

(1) No response.

(2) General: Don't know.

(2) I don't know.

(3) General: Failure to comprehend the question.

(3) No.'Cause if he's late he has to have an excuse.

(3) No. Maybe out an gone home.

(3) They stay sleepy.

(3) Don't lose none of it.

(3) To be tardy.

(4) General: Failure to comprehend the issue.

(5) General: Irrelevant statement or reason.

(6) General: Perseveration from previous question.

(7) General : Evasive answer.

0 Wrong response of rejection of the principle.

(1) General: Plain rejection of principle; wrong answer.

(1) No.

(1) No, don't know why.

(1) No—don't know.

(1) No. 'Cause he out there playin.

(1) Should be there about 8:30, but it is not wrong to come after 9. Will be a mark on your record.

(1) No,'cause, if you can't get there on time — you can't.

(1) No. They didn't do nothin.

(2) General: Rejection of principle with projection.

(Scoring Manual ECT Cont. Item 6)

**Score**

0 (3) General: Rejection of principle with rationalization.

(3) No. Might not get up early enough.

(3) No, you have to bring a note.

(3) No. Bring a note for the teacher.

(3) No. If he lives far away he might not help it.

(3) No. If you didn't get up in time it would be OK.

(3) Not if you can't help it. (q) Sometime you wake up too late.

(3) Yes. If you outta the house in time to get to school it's wrong; but if you didn't get outta the house in time it ain't.

(3) No. They won't miss the whole day.

(3) Yes, unless he can't help it --lives a long way.

(3) No. 'Cause maybe sometime they just can't get up.

(3) No, ma'am. (q) Maybe they just can't get there early like other children can.

(3) No. (q) 'Cause our teacher don't care about lates.

(3) No. 'Cause the doors might be locked.

(4) General: Rejection of principle for material gain.

(5) General: Rejection of principle with egocentric motivation.

(5) No. 'Cause I don't like school.

(6) General: Wrong answer with non-sequitur reason.

(7) General: Wrong answer with irrelevant reason.

(7) No, I don't think so. Teacher says go down to principal.

(8) General: Awareness of meaningfulness of principle, but rejection of same.

(9) General: Rejection of principle with flagrant defiance of same.

(0) General: Rejection of principle with inconsistent reason.

(Scoring Manual ETC Cont. )

7. If a person has been mean to you, would you like to see that person get hurt?

Principle: One should not harbor resentment for wrongs done him.

Score 2- An answer of "No" is given a score of 2, but coding of category 2 responses is based on the quality of the reasons given spontaneously by the subject.

Score

2 (5) General: No, with spontaneously given reason which is stated in terms of a generalization transcending the bounds of the situation as given.

(4) General: No, with spontaneously given reason not generalized and remaining within the bounds of the situation as given.

(4) No. They don't mean it sometime.

(4) No, they don't mean to be.

(4) No. People get mad at you. They don't mean to.

(4) No, 'Cause be sad.

(4) No. Maybe he don't want you to get hurt.

(4) No, sometimes maybe he was nice and kind to me.

(4) No, because you probably made the person to be mean.

(4) No, because he help me sometimes.

(4) No. Bible says, "Do not what the other man to you."

(4) No. Sometimes the people can't help but be mean to you.

(4) No, just'cause they're mean to you doesn't mean you have to be mean to them.

(4) No, we should become friends.

(3) General: No, with spontaneously given weak reason, such as expediency, propriety, fear of punishment or expectation of gain.

(3) No, and then he might play with you.

(3) No, don't pay no attention.

(Scoring Manual ECT Cont. Item 7)

Score

2 (3) No, if they're kin to me I wouldn't like them to get hurt; they're my kin.

(3) No, my teacher would hit me.

(3) No, it might get me in trouble and I'd be blamed.

(3) No, because you might be mean to someone else and you may get hurt too.

(3) No. Just don't want to see them get hurt. (q) Not just to be mean.

(3) No. 'Cause I don't want to get in trouble.

(3) No, 'Cause it's not nice to have a grudge and hate in you.

(3) No. God will pay him back some way.

(3) No. If you wish something bad for someone, something might happen to you.

(3) No. 'Cause you feel sorry.

(3) No, he's wrong.

(3) No. They'll blame it on you and it'll be your fault.

(2) General: No, without reason or with irrelevant reason.

(2) No. I might get hurt like you did.

(2) Nope — they're littler.

(2) No, because they may get hurt and have to go to the hospital.

(2) No. 'Cause I don't like to look at people when they get hurt and they be bleedin' too bad .

(2) No. They've been nice.

(2) No. Sometimes he been nice and sometime bad.

(2) No. He could be punished for it.

(2) No. 'Cause he was my friend.

Score

2 (2) No. 'Cause they'll get a whippin.

(2) No. May have to have an ambulance.

(2) No. 'Cause maybe it can happen to me.

(2) You tell the trol boy.

(1) General: Acceptable judgment without further elaboration.

(1) No.

(1) No ma'am.

1 Answers indicating uncertainty.

(1) General: No response.

(2) General: Don't know.

(3) General: Failure to comprehend the question.

(4) General: Failure to comprehend the issue.

(5) General: Irrelevant statement or reason.

(6) General: Perseveration from previous question.

(7) General: Evasive answer.

0 Incorrect responses indicating rejection of the principle.

(1) General: Plain rejection of principle; wrong answer.
(1) Yes.
(1) I sure would!

(1) Maybe. I think so.

(1) Yes, once a kid hit me and he fell and I said, "Good -- that's what you get."

(2) General: Rejection of principle with projection.

(2) Yes, he'd want you to get hurt.

(3) General: Rejection of principle with rationalization.

(4) General: Rejection of principle for material gain.

(5) General: Rejection of the principle with egocentric motivation.

(5) If you hate him you would.

Score

0

(6) General: Wrong answer with non-sequitur reason.

(7) General: Wrong answer with irrelevant reason.

(8) General: Awareness of meaningfulness of principle, but rejection of same.

(8) Yes. I wouldn't want to see 'em get hurt too bad. I'd just like to see 'em get a whoopin'.

(9) General: Rejection of principle with flagrant defiance of same.

(9) I would sock him!

(9) Uh uh. I'd rather do it myself.

(9) No. I could take care of it.

(0) General: Rejection of principle with inconsistent reason.

8. What would you do if your mother sent you to the grocery store to buy some food and the grocer gave you too much change? Tell me why.

Principle: One should return to its owner money or property which is given in error.

Score

5 Returns it, with generalized reason related to the principle which transcends the bounds of the situation as given.

(1) I would give him what's too much, because it is wrong to keep something that does not belong to you.

(1) Give it back. Not fair to keep other people's things.

(1) Give it back (q) You not suppose to keep anything that's not yours.

(2) Return it to him. (q) 'Cause it's wrong to keep other people's money.

4 Returns it, with reason not generalized beyond the bounds of the situation as given.

(1) I'll tell him. I wouldn't keep it; I wouldn't want to be stealing.

(1) I'll tell him. Otherwise it's stealing.

(2) I tell him he gave me too much. (q) 'Cause wouldn't want to cheat nobody.

(2) Tell him and turn it back to him,'cause you don't supposed to cheat nobody.

(2) Give it back.(q) Not right to cheat.

(3) Give it back. That's the honest way.

(3) I'll have to tell him that he gave me too much change. (q) He could of gave me too much. Because that's honest.

(4) Give it back. (q) It wouldn't be fair.

(Scoring Manual ECT Cont. Item 8)

Score

4 (4) Return it, 'cause keepin it is not fair.

(5) Give him back -- you have to give back money you supposed to not have.

(5) Would take it back. Youre supposed to return things.

(6) Take it home. Mother count it and bring it back because it not mine.

(7) Give it back. Because it belongs to him and not you.

(8) Give it back. He'll have to pay it out of his pocket if cash register shows more than what money is in it.

(8) Give change back to him -- because the cashier won't know.

(9) Take it back, 'cause if I was wrong I'd expect him to give me back my change.

(0) Take it back. One day you might give them too much and you'd want your money back.

3 Returns it, but does not give an adequate reason, or gives a weak reason such as propriety or expediency.

(1) General: Not right to keep it.

(1) I'd give it back 'cause it isn't right.

(1) I'd say you'd gave me too much change, and give it back. You're not supposed to keep the extra money.

(1) I'd give some of it back. I don't supposed to take that much money back.

(1) He's wrong if he keeps it.

(2) General: The proper thing is to give it back.

(2) Return it to the grocer; it would be courtesy.

(2) I'd return it to him. If you keep it for yourself it's not nice.

(3) General: Return it because you would be suspected of stealing it if you didn't.

Score

3 (3) I would return it back to him — so they don't think that I stole the money.

(4) General: Return it because he may have been only testing you.

(4) I'd bring it back. Because he might gave you the money on purpose — show you were honest.

(5) General: Give it back and tell them they made a mistake.

(5) Send it back; ask him "you gave me too much change."

(5) I'd tell him he gave me too much money.

(6) General: Return it or face retaliation.

(6) Take it back to the grocer or he'll not give you the right change next time.

(7) General: Statement of correct thing to do.

(7) I put the other in my pocket, take out right change and give it to him.

(7) I'd go back.

(7) I'd give some back.

(7) Give it back. 'Cause big boys would take it away from you.

(8) General: Tell person in charge, while being careful not to get employees in trouble.

(8) I'd tell that she gave too much money back and if I tell the boss she can't work in the store no more. If I tell the man she won't have a job — if I tell her she'll still have her job.

(9) General: Take it home and bring it back.

(9) Tell my mother and go give it back to him, don't know why — just be a sport.

(0) General: Mother would bring it back.

(0) Take it home, Mother count it and bring it back because too much.

(01) General: Tell mother and mother would instruct him to give back money.

**Score**

3 (01) Give it back. I go to mother and tell her man give me too much change. She's send me back to the store.

(01) I'd give some of it back — because if I didn't my mama send me back to tell him.

(02) General: Misunderstood at first, then gave correct answer.

(02) Take it to my mother. She might need it to get something else. (Repeated question,emphasized "too much") Oh, I understand now. You mean if he was suppose to give me 50 cents back and he gave me 75,then I'd give the 25 back to him. I didn't know what you meant.

(06) General: Return it to keep out of trouble.

(06) Go back and tell; because you might go to jail.

(07) General: Wrong to keep it, give it back to avoid trouble.

(07) Return it — you could get in trouble for that; it isn't right.

(08) General: Give it back with expectation of gain.

(08) Give it back to him. Maybe the guy'd give me more money.

(09) General: Correct response with reason not pertinent to the issue.

(09) Give it back. I wouldn't want germs from the money.

2 Recognizes that one does not have the right to keep money given in error, but suggests wrong or inappropriate action.

(1) General: Unclear about making restitution, but recognizes that he does not have the right to keep the money.

(1) I'd bring it home to my mother. If we spend it, it's a sin.

(1) You should carry it on home and let your mother have it. If you couldn't count money you have to carry it home. You wouldn't know if you had the right change. (Note: This child could not count money.)

Score

2 (2) General: Suggests inappropriate action.

(2) Ask him for it first.

(2) I'd tell my mother about it.

1 Uncertain, or gives response indicating failure to comprehend the situation.

(1) General: No response.

(2) General: Don't know.

(2) Give it back to him, I think. I don't rightly know what I'd do. I know what I ought to do.

(3) General: Failure to comprehend the question.

(3) Give it to my mother because get change.

(3) Tell my mother 'cause somebody might steal it and run away and you can't find it.

(3) You've lost some of it.

(3) Have to give 'em some more money.

(3) Give it back to him - Don't know - Somebody might need some change.

(3) 'Cause we need bread and everything. My mother always writes a note if she needs bread or butter or milk or cheese.

(3) I'd have him change some of it back to dollars.(q) I'd spend some of it.

(3) I would put it in the bank before I lose it.

(3) You put in the pocket. Take it home. If you don't take it home might lose it.

(3) Go home and tell your mother the man cheated-- he gave you too much change.

Score

1 (3) Should have right change and get right food you want. Should change it back. Too much money if had hole in coat and fell out mother will whip you.

(4) General: Failure to comprehend the issue.

(4) I'd give it back to my mother - your mother look on the bill and if you take some more money she'd whip you.

(4) Give it back to my mother 'cause it ain't mine.

(4) Give it back to him. 'Cause U.S. needs money.

(5) General: Irrelevant statement or reason.

(5) I don't go to the store myself. Wanda goes with me or my mother.

(5) Well, I will have 3 pockets and put it in one of my pockets and I have 2 bags of groceries and they heavy.

(6) General: Perseveration from previous question.

(7) General: Evasive answer.

(7) I'd take it to my mother and do what she says - take it back or keep it.

(7) She (my mother) might send it back.

0 Incorrect responses or rejection of the principle.

(1) General. Plain rejection of principle; wrong answer.

(1) I'd keep it.

(1) Give it to my mother.

(1) Buy me somethin'.

(1) Keep it. 'Cause he can't count.

(1) I'd keep it 'cause I want the money.

(2) Rejection of principle with projection.

(2) I'd keep it. He'd cheat me if he could.

Score

0 (3) General: Rejection of principle with rationalization.

(3) I might give it back to him or take it home and give it to my mother.

(3) Sometimes, I might give it back and sometimes I'd keep it - Some stores around here try to cheat you.

(3) I'd keep it. (q) It's the right thing to do. You can't give it back 'cause if you give it back he'll tell you you stole it.

(3) I'd keep it 'cause they should be watchin'.

(3) Keep it. Be more money for my mother - 'Cause the grocery man know about cash register and kids don't. He cheat his own self.

(4) General: Rejection of principle for material gain.

(5) General: Rejection of principle with egocentric motivation.

(6) General: Wrong answer with non-sequitur reason.

(7) General: Wrong answer with irrelevant reason.

(8) General: Awareness of meaningfulness of principle, but rejection of same.

(8) I'd either give it back or keep it dependin' on whether I like the change or whether I just wanted to be honest.

(9) General: Rejection of principle with flagrant defiance of same.

(0) General: Rejection of principle with inconsistent reason.

9. Suppose you could make a lot of money if you did wrong. Tell me, would you rather have a lot of money or do right? Tell me why.

Principle: One should forego material gain rather than act contrary to moral principles.

Score

5 Do right, with general reason related to the principle and transcending the bounds of the situation as given in the question.

(1) Do right. 'Cause money is not everything.

(2) Do right. (q) It's better to do right than to have money.

(3) Do right, because doing right means more than money; when you doin' right peoples honor you.

4 Do right, with reason not generalized beyond the bounds of the situation as given, or with general reason pertinent to the issue, but not directly related to the principle.

(1) Do right. Better to do right than steal.

(2) Do right. 'Cause that's the way I learned.

(3) Do right. (q) Because with a lot of money you can get something, but you get more pleasure when you do right.

(3) Do right. 'Cause you feel better when you do right.

(4) I'd rather do right, because if you doin' things wrong, you know you ain't doin' right.

(4) Do right. (q) Because it doesn't pay to do wrong. It sort of lies on your conscience and you never be comfortable with that money.

(5) Do right, like if a guy, because I wouldn't like to hurt anybody.

(6) Do right. It ain't mine.

(8) Do right. You can help a lot of people if you do right.

6

Score

4 (9) Do right, 'cause money don't do you no good. You can't keep it forever.

(0) Right. You can get further doing right.

(01) Do right. Best to do right because money won't get you nowhere. Money won't buy friends.

(02) Do right. (q) Money isn't much, but you can do right by doin' what the law says.

(03) Do right --if you do right they will follow you.

(04) Do right. If do wrong that would ruin your whole career -- life probably go bad all over.

3 Do right, with weak reason, such as fear of punishment, expectation of gain, expediency , or propriety.

(1) General: Do right in order not to get apprehended and/or punished.

(1) Do right. You might get caught.

(1) Do right. If you do wrong they catch up with you.

(1) Right. You'll get into trouble even with money.

(1) Do right. 'Cause if people tell my mother, mother get a razor strap and whip me.

(1) I'd rather do the right thing --'cause it's more safe to do the right thing.

(1) Do right - so we won't get a whippin'.

(2) General: Do right, because if you don't, you'll get a bad reputation.

(2) Do right. They'll call you guilty.

(4) General: Do right, because in general it pays to do right.

(4) Do right, it's sensible.

(4) Do right. 'Cause it don't pay to do wrong.

Score

3 (5) General: Do right or no one will like you.

(5) Do right. Because if you do wrong and get a lot of money, well, no one will like you.

(5) Do right. If I do wrong my mother won't like me anymore.

(5) Do right. If you don't do right the people won't talk to you.

(6) General: Doing right is rewarded by Heaven while doing wrong is punished by Heaven.

(6) Do right. (q) Any time you do wrong your days be short.

(6) Right. If you do wrong, God might punish you.

(6) Do right. You'd live more longer. It's against the rule.

(8) General: Doing wrong may become habit forming.

(8) Do right . If you do wrong, make lots of money, you do it all your life.

(8) Do right. So that when I get grown, I won't be takin other peoples's money and keepin it.

(9) General: Do right, so you won't have to worry about being caught.

(9) Do right. 'Cause you wouldn't have to worry about someone chasing you for it.

(0) General: Doing right is generally rewarded by prosperity.

(0) Do right. If you do wrong you won't get a lot of money; if you do right you will get a lot of money.

(02) General: Do right, in accordance with internalized standards.

(02) I'd rather do right. I wouldn't like to do wrong.

(02) Do right. I don't like to do wrong things.

(02) Do right. Be a bad boy.

(02) Do right. You don't want to do things wrong.

(02) Do right, 'cause it ain't nice to keep somebody else's money.

(03) General: Do right. Doing wrong is like stealing, sinning, etc.

(03) No. It's stealing.

(Scoring Manual ECT Cont. Item 9)

Score

3 (03) Do right. (q) 'Cause it's honest.

(04) General: One should work for one's money.

(04) Do right. Work for your money.

(04) Go to work and get money.

(04) Do right, and make money.

(05) General: Do right. One should do a job well and earn one's pay.

(05) Do right. Like somebody pay you to clean up house and you didn't do a good job and they pay you a lot of money, you should clean up house right.

(09) General: Do right and you will receive a reward for doing right.

(09) Do right. 'Cause you want Santa Claus give you some toys.

(09) Do right. Some people might give you something.

(09) Do right. If you do right your mother will give you some money.

2 Do right, with irrelevant reasons or unsupported by a reason.

(1) General: Acceptable judgment without further elaboration, or don't know.

(1) Do right. (long pause) Don't know.

(1) Do right (q) Don't know.

(2) General: Acceptable judgment with virtual repetition of question; i.e., shouldn't, wrong, right, etc.

(2) Do right. (q) It's better to do right than to do wrong.

(2) Do right, cause that's the right thing.

(2) Rather do right. Because you shouldn't do wrong things.

(3) General: Acceptable judgment with irrelevant reason.

(3) Do right. I don't like to get money from other people.

Score

2 (3) Do right. (q) If your mother told you you shouldn't go, you shouldn't go.

(3) Do right. (q) You don't know.

(3) Do the right thing, 'cause someone would only take your money anyway.

(4) General: Acceptable judgment with bizarre response.

(5) General: Acceptable judgment with inconsistent reason.

(5) Do right. If you do right, people won't like it.

(5) Do right. 'Cause someday you might need the money.

(5) Do right so you can have a lot of money and go someplace.

(6) General: Acceptable judgment with perseveration from previous question.

(7) General: Acceptable judgment with child's meaning unclear, incomprehensible.

(8) General: Acceptable judgment with reason indicating failure to understand inquiry.

(8) Do right thing, you're not suppose to beg people for money.

(9) General: Acceptable judgment with untrue reason.

(9) Do right. If you have a lot of money it means you probably steal from somebody.

1 Uncertain, or gives response indicating failure to comprehend the issue.

(1) General: No response.

(2) General: Don't know.

(2) I'd have to think about that one.

(3) General: Failure to comprehend the question.

(3) Have a lot of money. 'Cause if you do things right you can get a lot of money.

Score

1 (3) Do right. (write) if you have to do arithmetic.

(4) General: Failure to comprehend the issue.

(4) Do right. Because I'd rather have a lot of money.

(5) General: Irrelevant statement or reason.

(6) General: Perseveration from previous question.

(7) General: Evasive answer.

0 Incorrect response or rejection of the principle.

Lots of money, with rationalization or projection. Rejection of the principle.

(1) General: Plain rejection of the principle; wrong answer.

(1) Make a lot of money. Don't know why.

(1) Have a lot of money.

(2) General: Rejection of principle with projection.

(2) Lots of money. Everybody is out for a fast buck.

(3) General: Rejection of principle with rationalization.

(3) Lot of money. So I could buy things for mother.

(3) Make a lot of money and buy furniture.

(4) General: Rejection of principle for material gain.

(4) I'd rather have a lot of money. Because you may have to buy a lot of stuff. I'd do without it because if you do wrong you get in a lot of trouble.

(5) General: Rejection of principle with egocentric motivation.

(6) General: Wrong answer with non-sequitur reason.

(7) General: Wrong answer with irrelevant reason.

(8) General: Awareness of meaningfulness of principle, but rejection of same.

(9) General: Rejection of principle with flagrant defiance of same.

(0) General: Rejection of principle with inconsistent reason.

10. If another child has three candy bars in the desk, and you want one, is it all right for you to take one if no one is looking? Why?

Principle: One should respect the property rights of others.

Score

5 No, with reason related to the principle and generalized in terms transcending the bounds of the situation set up by the question.

(1) No. Because the candy bars are his property and it is not right to take things that belong to others.

(2) No. Because I shouldn't take things that are not mine.

(2) No. Not supposed to take anything that don't belong to you.

4 No, with reason indicating S acknowledges the ethical principle but which is not generalized beyond the bounds of the specific situation.

(1) No, because they are not mine.

(1) No ma'am. (q) It ain't yours.

(2) No. Because they are his.

(3) No, you have to ask 'em for it, 'cause if you take something that don't belong to you, you won't be doin what's right.

(3) No ma'am. (q) I'ts not right to take somebody else's candy and they pay for it.

(4) No, I'll ask; otherwise it's stealing.

(4) No. It's stealing.

(4) No, 'cause you're stealin from him. You could ask him.

(5) No, it's not right. It's not right to steal from other people. If you steal once you will always steal.

(6) No. (q) It wouldn't be fair and you wouldn't want anybody takin things from your desk.

Score

3 No, with weak reason or reason indicating correct response was motivated by fear of consequences of wrong action.

(1) No, might get caught.

(2) No, he'll beat me up.

(2) No, he won't like it.

(2) No, it would start a fight.

(3) No, 'cause he might find out who had it and you'd be in trouble.

(4) No. Somebody might see me and tell teacher.

(5) No, you should ask.

(5) No,ma'am,you should ask.

(5) No,ask him. If he wants you to have one he'll give it to you.

(5) No. Ask him for it; that's the right way.

(6) No, ask him. (q) 'Cause it ain't polite to eat someone else candy.

(7) No, it isn't fair to take somebody else's.

(8) No, it's just not good.

(8) No, 'cause that's bad to take some candy that don't belong to us.

(8) No. It ain't nice.

(8) No, 'cause that isn't kind.

(9) No, a sneaky way.

(0) No, 'cause that's a sin.

(01) No. (q) If you want one you'd ask your mother or father for a nickel and buy one.

(02) No. (q) 'Cause the teacher may think somebody else done it.

(03) No,ma'am. She might want to have it. If she want you to have it, she'd give it to you.

(04) No,ma'am, because she might want it herself.

Score

3 (04) No. Ha! Ha! Ha! It would make him feel bad.

(05) No, because they might miss it and think somebody else took it. She probably want it for somebody else and it wouldn't be right.

(06) No, if you take one they would know it was you who stole it and they would call you a thief and you wouldn't have another friend.

(07) No. Because they'll say you steal. "Look at that girl steal."

(08) No. They think you've stolen it.

(08) No. They'll say you're stealin.

(08) No. 'Cause someone will say that you stole it.

(09) No. Then they won't have no more trust in us.

(13) No. 'Cause he may come back and say somebody stole his candy bar.

(15) General: Retaliation in kind.

(15) No. Another person -- you have 3 candy bars -- might go in your desk and take 3 candy bars.

2 No, with irrelevant reasons, or without a reason.

(1) General: Acceptable judgment without further elaboration, or don't know.

(1) No. I don't know.

(2) General: Acceptable judgment with virtual repetition of question; i.e.; shouldn't, wrong, right, etc.

(2) No. Not supposed to.

(2) No, it's bad.

(2) No, 'cause you're doing wrong.

Score

2 (3) General: Acceptable judgment with irrelevant reason.

(3) No, candy bad for you.

(3) No,ma'am, because it might not be his and he'll get punished.

(3) No,ma'am. (q) 'Cause he could of took it.

(3) No. Because some children might see and they want some.

(3) No, he's grouchy.

(4) General: Acceptable judgment with bizarre response.

(4) No. Might put some poison in it.

(5) General: Acceptable judgment with inconsistent reason.

(6) General: Acceptable judgment with perseveration from previous question.

(7) General: Wrong answer with irrelevant reason.

(7) Yes. I forgot.

(7) Yes. It's polite.

(8) General: Awareness of meaningfulness of principle, but rejection of same.

(9) General: Rejection of principle with flagrant defiance of same.

(9) Yes. Teacher won't take it away from you.

(9) Yes, he'll never know who took it.

(0) General: Rejection of principle with inconsistent reason.

(0) Yes. Eatin' candy outside is all right. When eat candy inside teacher get cha.

**11. Is it all right to take a ride on someone else's bicycle without asking them, if they left the bicycle outside? Tell me why.**

**Principle: One should respect the property rights of others.**

**Score**

**5** No, with reason related to the principle and generalized beyond the bounds of the situation set up by the question.

(1) No. Because the bicycle belongs to someone else and it's wrong to take the property of others.

(2) No. Because it is wrong to take things that are not yours.

(2) No,ma'am. (q) You don't take nothin that don't belong to you unless the person says so.

(2) No. It's not right to take things without asking.

(3) No. You're not suppose to use other people's things unless you ask.

**4** No, with reason indicating S is aware of ethical principle, but which remains within the bounds of the situation set up by the question.

(1) No. Because it belongs to him.

(2) No. Because it is not mine.

(2) No, wrong. It not yours, and you don't act like it.

(2) No. 'Cause you'll be taking it that doesn't belong to you.

(3) No. (q) That's going off without their permission.

(4) No. That would be stealing.

(4) No. That's stealing.

(4) No. (q) Because I got an English racer and if I left my bike outside and somebody took a ride that's just like stealin.

(4) No. They grab it and steal it and they take it home.

(4) No. Same as takin'it.

(4) No. 'Cause you thief.

Score

4 (5) No, because that would be almost like stealin' and another way it's without askin'. I think you should ask the person first.

(6) No, 'cause I won't like for no one to take my bicycle.

3 No, accompanied by an acceptable but weak reason, such as fear of punishment, expectation of gain, avoidance of trouble, or propriety.

(1) General: No. Someone would think you were stealing it.

(1) No, they think that you might steal it.

(1) No, ma'am, they'd say you stealing.

(1) No. 'Cause they'll blame you then.

(1) No, they'd think you stoled it. Might get hurt - should always ask before you do it.

(1) No, ma'am. They'll be thinkin' that you stealin' it. Call policeman.

(1) No, ma'am. (q) They think you're taking it and call the policeman.

(2) General: They would know you were stealing the bike.

(2) No, they'll know you stealin' his bike.

(3) General: No. He might think it was stolen.

(4) General: No, because of fear of physical or psychological retaliation by owner.

(4) No. He might beat me up.

(4) You might break it - give 'em a flat tire and he'd be mad at you.

(4) No. They wouldn't like it.

(4) No. They might get mad.

(5) General: No. If I broke it, I would have to pay for it.

(5) No, you're likely to break it.

(5) No. You might turn over and break it. It will be your fault.

(5) No, ma'am (q) Because something could happen to it.

Score

3 (5) No. If it get broken it be your fault.

(5) No. (q) Might break it.

(5) No. (q) Because you don't suppose to ride on things that don't belong to you because if you break it you have to pay for it.

(5) No. (q) Because you might have a accident, might tear up his bicycle.

(5) No. Because when you take someone's bike and they doesn't know it - like to have a flat or fall and break something on it.

(5) No. Might fall and break the bike.

(5) No. Because you may fall and break it or something.

(5) No. Might get broke.

(5) No. You could break it or have a wreck on it and tear it up.

(5) No. Just in case you fell and break it.

(5) No. Because maybe if you got in crack up it would be ruined -- then that kid wouldn't have no more good bike.

(5) No. Because big boys might take the bike away from you and it'd be your fault.

(6) General: Not supposed to take bike -- have to ask -- that's wrong.

(6) No, 'cause you are supposed to ask before you ride.

(6) No, 'Cause you should ask them first.

(6) No. (q) You should ask them.

(6) No, you have to ask 'em.

(6) No, go ahead and ask them if you can take a ride.

(6) Because you would have to ask 'em first. Get angry and tell the teacher.

Score

3 (6) No. Just leave the bike alone.

(6) Go in the yard and ask; they have the cops after you.

(6) No. (q) I tell 'em can I have a ride home.

(6) You should ask first. (q) If you take a ride and not ask he'd wonder who got the bike.

(6) No. (q) Because if something be broken they would blame you. It would be better for you to ask them.

(6) It is all right for me if I tell them. If they say yes, I can have a ride. If they say no, I have no rides.

(7) General: It's wrong unless he tell me I can ride it.

(7) No. 'Cause they don't want you to be ridin' the bicycle.

(7) You're not supposed to because they may not want you to ride on it.

(7) No. 'Cause maybe he don't want you to.

(7) No. Maybe their mother doesn't want other people to ride their bike.

(8) General: No, because the owner has a right to have the bicycle available when he wants to ride it.

(8) No, because they might want to ride it when they come out and they think you might break it or somethin'.

(8) No. Because if they had to hurry up home and person had stole bike and had long way to go -- probably had to walk afoot.

(9) General: No, because if you take it the owner will not know where it is.

(9) No. Because you might take the bike and not come back -- and boy come outside and find his bike missin'.

(9) No. Because if they went away and came back -- wouldn't know where their bike was and could be worried.

Score

3 (9) They don't know if you are riding it.

(9) No, then he'll start lookin' for his bicycle.

(01) General: One can get involved with the police, jail, etc.

(01) No -- you get put in jail like that.

(01) No, Sometimes you get caught.

(01) No. You could get put in jail for it.

(01) No, You'll get in trouble with the police.

(01) No. Because the boy might call the police and then you get in trouble.

(01) If you do take the bicycle then they will tell the cops to find the bike and then you'll get yourself in a mess of trouble.

(01) Supposed to ask 'em first. (q) 'Cause if you just take it they'll think you stole it. Maybe he might tell his mother, she'll call the police on you, you'll wind up in the Juvenile Home.

(01) No. (q) Because if you take it they could call the police.

(01) No. 'Cause he might call the police on you.

(01) No, ma'am. Because you can get in trouble -- might call police and you'd be in for it.

(02) General: One can get in trouble (generalized).

(02) No. 'Cause you might make it have a flat and when you took it back you'd say you didn't do it and you'd be in trouble.

(02) No, You'd get in trouble.

(02) No, Because you'd get in trouble.

(02) No. Because maybe his bike be out there -- go in to get something to fix it-- you ride it and something break -- he'll accuse you of botherin his bike.

Score

3 (02) No. You might want to steal the bike -- might get in trouble.

(02) No ma'am. If you ride, something happen to bike, you be in trouble.

(02) No. You get in trouble.

(02) No. (q) Because you could get into a lot of trouble. (q) Perhaps the girl's mother doesn't want you to ride it.

(03) General: No, because of parental punishment or parental criticism.

(03) No. 'Cause when you get caught might get a whippin!

(03) No. They might get mad and go tell your mother.

(03) No. 'Cause they'll go get their mother.

(03) No. The mother hits the little boy.

(03) No, they might tell my mamma.

2 No, unsupported by a reason or accompanied by an irrelevant or inconsistent reason.

(1) General: Acceptable judgment without further elaboration, or don't know.

(1) No. I don't know.

(1) No.(q) 'Cause.

(1) No.

(2) General: Acceptable judgment with virtual repetition of question; i.e., shouldn't, wrong, right, etc.

(2) No, it isn't right.

(2) No. You just ain't supposed to do it.

(3) General: Irrelevant reason.

(3) No. I have my own bike.

(3) No. I don't know how to ride a bike.

(Scoring Manual ECT Cont. Item 11)

Score

2 (3) No. Might get hit by a car.

(3) No. You might get hurt on it.

(3) No. I don't want to ride nobody else's bike.

(3) No. Because you might forget and carry it home.

(3) No. Because you take other people's guns.

(3) No. You might get hurt on the bike and they won't know it.

(3) No. Because you might ride down the street, car come along and knock you off. It'll hurt you.

(3) You might hurt your leg or somebody else's.

(3) No. Because if you go in the road and ride and car come and you could be hit and police would get him for lettin' somebody ride his bike.

(3) If you are riding a bike and a car should hit you, the owner of the bike would get blamed and it would be all your fault.

(3) No. Someone can take it or something.

(3) No. 'Cause mother do not want nobody to ride on a bike without her permission.

(3) No. 'Cause they'll say it's theirs.

(3) No. Because somebody might go to store and forgot to take his bike.

(4) General: Acceptable judgment with bizarre reason.

(4) Well, no. Because this other person has to go someplace in a quick hurry, and when he got there his mother be done dead.

(Scoring Manual ECT Cont. Item 11)

Score

2 (5) General: Acceptable judgment with inconsistent reason.

(5) No ma'am. (q) Because it might be somebody I don't know.

(6) General: Acceptable judgment with perseveration from previous question.

(7) General: Acceptable judgment with meaning unclear, or incomprehensible.

(7) No. Because they will get.

(8) General: Acceptable judgment with reason indicating failure to understand inquiry.

(9) General: Acceptable judgment with untrue reason.

1 Uncertainty, expressed by I don't know. Yes, with no evidence of comprehension of the question.

(1) General: No response.

(2) General: Don't know.

(2) I'm not sure.

(2) Maybe.

(2) Don't know.

(3) General: Failure to comprehend the question.

(3) Yes. Because he told 'em.

(3) 'Cause somebody will steal it if you leave it outside. Somebody will take it 'cause you always fall and hurt your neck.

(3) No ma'am. (q) See, if they come back outside and they see you comin' back with it you won't have nothing to prove you weren't riding it.

(Scoring Manual ECT Cont. Item 11)

Score

1 (4) General: Failure to comprehend the issue.

(4) No, ma'am. (q) 'Cause you not supposed to. You don't know where they got bicycle from. Police catch you with it and they'll blame you about it.

(5) General: Irrelevant statement or reason.

(6) General: Perseveration from previous question.

(7) General: Evasive answer.

0 Wrong judgments and rejection of the principle.

(1) General: Plain rejection of principle; wrong answer.

(1) Yes.(q) I don't know.

(2) General: Rejection of principle with projection.

(2) Yes. He would take mine.

(3) General: Rejection of principle with rationalization.

(3) Yes. He shouldn't leave it out.

(3) No, That would be if you never brought it back. Call police.

(4) General: Rejection of principle for material gain.

(4) Yes. He wouldn't know it and I would bring it back.

(5) General: Rejection of principle with egocentric motivation.

(5) Yes. Fun to ride.

(6) General: Wrong answer with non-sequitur reason.

(7) General: Wrong answer with irrelevant reason.

(8) General: Awareness of meaningfulness of principle, but rejection of same.

(9) General: Rejection of principle with flagrant defiance of same.

(0) General: Rejection of principle with inconsistent reason.

12. If everyone else is copying in a test, is it all right for you to copy, too? Tell me why.

Principle: One should not deprive others of their due or attempt to enhance one's own status by taking unfair advantage in a contest or test. One should not do wrong even when all others are doing so.

Score

5 No, with reason related to the principle and generalized beyond the bounds of the situation set up by the question.

(1) No. You would be getting credit which you did not earn.

(2) No. That would be taking something that didn't belong to you.

(3) No. I wouldn't want to get high marks that way.

(4) No. That would not help me learn.

(4) No--you don't learn that way.

(4) No,ma'am. (q) Because it not going to help you.

(4) No--you'd be cheating yourself.

(5) No. Only those who deserve it should get high marks.

(6) No. This would deprive others of recognition who were entitled to it.

(7) No. Because it wouldn't make it right just because everybody is doing it.

(7) No, 'cause it's not fair. 'Cause they copy it's not fair for you to copy too.

(7) No--it would be cheatin. You don't have to do what others do. You see, if they're wrong you don't have to be wrong too.

(8) No, because it's cheatin' and you don't learn much by cheating.

(9) It depends upon what the teacher says. If she don't want you to copy. If you copy from someone else she won't know how much you

could do and you wouldn't know how much you could do; wouldn't be learning anything.

Score
4 No, with reason indicating awareness of the ethical principle, but not generalized beyond the bounds of the situation set up in the question.

(1) No, well if you do get it right copying you won't know it after that .

(1) No--not learnin nothin' that way.

(1) No,ma'am, 'cause if you copy you won't never know nuthin'.

(1) No, you won't learn nothing like that.

(2) No, you'd just be hurtin' yourself. (q) By not learning how to spell the words.

(2) No. You won't even know the right answer.

(3) No, it isn't all right. If you copy off somebody then you'll always copy and you won't ever learn nuthin'.

(4) No, it still ain't to do no good. You get nowhere copying.

(5) No. That isn't coming out of your head.

(5) No, because you might be copying something that's wrong and yours might be right. If you copy, you won't be learnin' anything.

(6) No. Be cheating.

(6) No. It's dishonest.

(6) No. 'Cause you'd be a copy cat.

(6) No. (q) Be cheatin'. Maybe pass when you don't know nuttin'.

(7) No, teacher wants your work not somebody else's.

(8) No. Maybe you'll get a 100 and they'll get a U.

(9) No, they won't know if you know it or if you don't know it because they'll be copying.

(0) No. Because the kids you copy from get zero too.

Score

3 No, with weak reason such as fear of punishment or other unfavorable consequences.

(1) No. 'Cause if you'll copy you'll look and teacher will say, "What are you looking?"

(1) No. Because it would be wrong. If teacher knew about it get in trouble and do it over.

(1) No,ma'am. (q) Teacher'd ask me why did I get the same kind that he got.

(1) No,ma'am. Because the teacher can find out I was copying.

(1) No. (q) So I won't get in no trouble. That can get you in trouble.

(2) No. Teacher catch you and tear up your paper.

(2) You'd be cheatin'that way. Teacher'd find out and you'd get a U.

(2) No. You'll get sent home.

(3) No, so nobody won't call you no copy cat.

(4) No; cause they'll give you a test by yourself and know you don't do the work right.

(4) No. If you are copying and get another test and these people were around and you get a lower grade then they would know you were copying from someone else.

(5) No, probably be copying all the time.

(6) No--because if the teacher pass you to a higher grade you'd forget all the work you knew and that you copied.

(7) No. He might have the wrong answer and yours be wrong too.

(7) No, they could be wrong.

(7) No, other person could be wrong.

Score

3 (8) No ma'am, it would be cheap.

(8) No--because it isn't nice to copy from the other person.

(9) No, you should do your own work.

(9) No. (q) You shouldn't copy; you should write what you know.

(0) No, you're not supposed to copy off the other fellow. You're supposed to copy off the board.

(01) No. Because that would make the other one get a "U" and the other one a "100."

(02) No. Because you might pass the test and they wouldn't.

(03) No, because the teacher would know that you couldn't get all the words right.

(04) No, because the teacher tells you not to.

(05) No. (q) 'Cause they might tell the teacher.

(06) No. (q) Because the teacher told us not to look on other people's 'cause they cheat if you look.

2 No, with irrelevant reason or no reason, or a reason which is a virtual repetition of the question.

(1) General: Acceptable judgment without further elaboration, or Don't know.

(1) No.

(1) No. I don't know.

(1) No--'cause.

(2) General: Acceptable judgment with virtual repetition of question; i.e., shouldn't, wrong, right, etc.

(2) No, 'cause that's wrong. Don't suppose to copy when you have a test.

(2) No. I don't like to copy.

Score

(2) Because they do the wrong thing. They shouldn't do it.

2 (2) No, because you're not supposed to copy off each other's paper.

(2) No. You'll be copying from them and that ain't right.

(3) General: Acceptable judgment with irrelevant reason.

(3) No, ma'am. (q) Because that means that you don't know.

(3) No. Tell the teacher.

(4) General: Acceptable judgment with bizarre response.

(5) General: Acceptable judgment with inconsistent reason.

(5) No. Maybe they get it right and you get it wrong.

(6) General: Acceptable judgment with perseveration from previous question.

(7) General: Acceptable judgment with child's meaning unclear, incomprehensible.

(8) General: Acceptable judgment with reason indicating failure to understand inquiry.

(9) General: Acceptable judgment with untrue reason.

1 Uncertain, or yes or no, with irrelevant reason indicating that the subject did not comprehend the issue.

(1) General: No response.

(2) General: Don't know.

(3) General: Failure to comprehend the question.

(3) Yes. You learn.

(3) It depends--if the teacher wants you to or not.

(3) Yes, because teacher put it on board for everybody.

(3) Yea. Cause teacher wants you to.

(4) General: Failure to comprehend the issue.

(5) General: Irrelevant statement or reason.

(6) General: Perseveration from the previous question.

(7) General: Evasive answer.

Score

0 Yes, with rejection of the principle.

(1) General: Plain rejection of principle; wrong answer.

(2) General: Rejection of principle with projection.

(2) Sure. Everybody copies.

(3) General: Rejection of principle with rationalization.

Yes. If everyone else can, so can you.

(4) General: Rejection of principle for material gain.

Yes. So you would get a high mark.

Yes. So you would get a good mark.

(5) General: Rejection of principle with egocentric motivation.

(6) General: Wrong answer with non-sequitur reason.

(7) General: Wrong answer with irrelevant reason.

(8) General: Awareness of meaningfulness of principle, but rejection of same.

(9) General: Rejection of principle with flagrant defiance of same.

No. Yeah--'Cause you learn more that way.

Yes, if they wanted to.

(0) General: Rejection of principle with inconsistent reason.

13. Is it all right for a child to make noise or run around the room when the teacher is not there? Tell me why.

Principle: One should act in accordance with prescribed standards of conduct and with consideration for the rights of others even when his behavior is not observed by persons in authority.

Score

5 No, with reason related to the principle and generalized in terms transcending the bounds of the situation as given or expressed in terms of consideration for the rights of other individuals and of the group.

(1) No. You should think of the next person.

(2) No. You should not behave in school in such a way as to bother others.

(3) No. Because I should know how to act whether the teacher is there or not.

(4) No,ma'am, you obey even if you ain't watched.

4 No, with reason which shows that subject is aware of principle but which remains within the bounds of the situation set up in the question.

(1) General: No. That bothers the other rooms.

(1) No, you disturb the other rooms.

(2) General: No. Other person might be studying or reading.

(2) No. If the kids want to do their work they can't.

(2) No. That would disturb those doing their work.

(3) General: No. It would give the room a bad name.

(3) No. Another teacher might come in and say that this teacher isn't teaching her children how to sit down and be quiet.

Score

4 (3) No. You can get a check on your report card and get in a lot of trouble. If another teacher comes in she'll say your teacher doesn't take care of her room right and that will get around the school.

(4) General: No. 'Cause you'd be doing it behind her back.

(4) No. Because that's being a hypocrite.

(5) General: No, teacher puts you on your honor.

(6) General: No ma'am. Because he might run around and teacher catch him or either knock something down and break it and other kids be begin to do their work and he come around and annoys them.

(7) General: No. That just makes other people do it.

(7) No. Because whole room will start.

(7) No. Make all the udder ones do the same.

(8) General: No. Because if he was teachin' and he go out of the room he wouldn't want her to run around.

(9) General: Internalized standards.

(9) Oh, no! First of all, if he's not in a good mood he'll give you lot of work. It will show how stupid. You have respect for yourself.

(0) General: No, the whole class would suffer.

(0) No, the room will be punished.

(0) No, ma'am, when he come back, everyone, even the good kids, get the blame of what you did.

3 No, with weak reason such as fear of punishment or avoidance of other unfavorable consequences, or propriety.

(1) General: Punishment by school authority, worker or principal.

(Scoring Manual ECT Cont. Item 13)

Score (1) No. Teacher can catch you and hit you.

3 (1) No. Teacher take you to the office.

(1) No. They write your name down.

(1) No, substitute will tell the teacher.

(1) No. You should stay quiet.(q) You might get in trouble.

(1) No. Because you'll get a bad mark on your report card.

(1) No. Sometimes teacher can walk quiet into the room.

(1) No. Teacher wouldn't like it.

(5) General: No. Could get hurt, hurt someone or destroy property.

(5) No. She might break something.

(5) No. Running around could get hurt.

(5) No. Well they could trip and fall down and split their head open- the teacher wouldn't be blamed but the person who did it would blame the teacher.

(5) No.'Cause it's not right- might knock something down- bust a skull.

(5) No.'Cause you might start running around and might trip and bust your head or somethin.

(6) General: No. Children should respect teachers.

(7) General: No, with a statement of proper behavior.

(7) No. Should sit down and do his work.

(7) No.'Cause we're not supposed to run around the room. Just act the same.

(7) No, you're supposed to be quiet at all times.

(7) No. Because when teacher out everyone supposed to be in seats.

(7) No. Because when you at school you supposed to sit down and do your work and be very quiet.

(7) No. Because you are to play outside instead of in school.

(Scoring Manual ECT Cont. Item 13)

Score

3 (7) No, ma'am. (q) 'Cause if the teacher don't give you permission you ain't supposed to do it.

(7) No.'Cause the school room is for you to learn - not to play.

(8) General: No, because teacher does not want you to.

(8) No. (q) 'Cause the teacher will come in; if the teacher say "get up" you get up. She say "stay sittin" you stay.

(9) General: It is wrong, and teacher does not like it.

(9) No,ma'am.(q) Because he's doing wrong.Teacher doesn't want him to make noise.

(0) General: No, generally detrimental to room's interest.

(0) No,ma'am. He'd be spoilin everything.

(01) General: That would spoil the room.

(01) No. Making the room noisy and bad.

(02) General: That shows poor home training.

(02) No. They have no home training.

(03) General: They should know better.

(03) No. (q) 'Cause they know better.

(05) General: No, teacher will give a bad report about the room.

(05) No. Because she might be talkin to some principal from another school. She tell other school how they be actin.

(06) General: No, that would make a general disturbance.

(06) No. It's making a large sound.

(06) No, make too much noise.

(07) General: No, that is bad behavior.

(07) No. They bad.

(07) No,ma'am.'Cause they do it when the teacher not there they bad.

(07) No. 'Cause it's bad.

(08) General: Disapproval by group.

(08) No. They be starin' at you.

(Scoring Manual ECT Cont. Item 13)

Score

2 No, with an irrelevant reason or without a reason.

(1) General: Acceptable judgment without further elaboration, or don't know.

(1) No. I don't know.

(2) General: Acceptable judgment with virtual repetition of question i.e., shouldn't, wrong, right, etc.

(2) No.'Cause the teacher don't play and don't like noise.

(2) No, that's wrong too.

(2) No. (q) Just shouldn't.

(3) General: Acceptable judgment with irrelevant reason.

(3) No.'Cause teacher think you be running around room.

(4) General: Acceptable judgment with bizarre reason.

(5) General: Acceptable judgment with inconsistent reason.

(6) General: Acceptable judgment with perseveration from previous question.

(7) General: Acceptable judgment with meaning unclear, or incomprehensible.

(8) General: Acceptable judgment with reason indicating failure to understand inquiry.

(9) General: Acceptable judgment with untrue reason.

1 Uncertain

(1) General: No response

(2) General: Don't know

(2) I don't know.

(Scoring Manual ECT Cont. Item 13)

**Score**

1 (3) General: Failure to comprehend the question.

(4) General: Failure to comprehend the issue.

(5) General: Irrelevant statement or reason.

(6) General: Perseveration from previous question.

(7) General: Evasive answer.

**Score**

0 Yes, with rejection of the principle, or yes, without awareness of the principle.

(1) General: Plain rejection of principle; wrong answer.

(2) General: Rejection of principle with projection.

(3) General: Rejection of principle with rationalization.

(3) Yes. If you have nothing else to do.

(4) General: Rejection of principle for material gain.

(5) General: Rejection of principle with egocentric motivation.

(5) Yes. It's fun to play.

(5) It's all right to make noise, 'cause you'll feel like talking. It's not all right to run around the room, 'cause people under you are trying to write.

(6) General: Wrong answer with non-sequitur reason.

(7) General: Wrong answer with irrelevant reason.

(7) Yes, if you are there alone.

(8) General: Awareness of meaningfulness of principle but rejection of same.

(9) General: Rejection of principle with flagrant defiance of same.

(9) Yes, if you don't get caught.

(9) Yes, that's when we have the most fun.

(0) General: Rejection of principle with inconsistent reason.

14. Should we always tell the truth? (If answer is yes, ask, "Why". If answer is no, ask, "When do you think it is all right to tell a lie?"

Principle: One should be truthful in his relations with his fellow man.

Score

5 Yes, with a generalized statement related to the principle expressing understanding of the social consequences of truthfulness.

Yes or no, with a statement justifying answer with a socially accepted exception to the principle; i.e., privileged communication, dissimilation in instances in which frankness may result in unfavorable effect upon physical or mental health of others.

(1) Yes. You can count on people who tell the truth.

(2) Yes, but it is all right not to tell all the truth sometimes--like when a person is too sick to hear the truth.

(3) Yes, but it is all right not to tell all the truth so as not to hurt someone's feelings.

4 Yes, or no, with a concrete reason indicating S is aware of ethical principle, but which remains within the bounds of the situation set up in the question.

(1) Yes. You'll feel better.

(1) Yes. You'll be happier.

(1) Yes. (q) 'Cause you won't have nuttin' on your mind about it.

(1) Yes. The truth feels good. If you have to tell the truth 'cause a story ain't good.

(1) Yes, ma'am. (q) Well, if you tell the truth more people will like you for one thing. And the truth is the best policy -- you know you're doing right.

Score

4 (2) Yes. Because if you don't, people will not trust you.

(2) Yes, so everybody will believe us when we say something.

(3) Yes, but you can tell a lie so someone's feelings won't be hurt.

(4) Yes, 'Cause then you are honest and other people will not get into trouble because of you.

(4) Yes, because sometimes if you tell a story you might get someone in trouble or your mother and father in trouble.

(5) Yes. To be honest, that's what I want to be.

(6) Yes. If you don't, it will worry you.

(7) No, not necessarily, because suppose it means you put someone up to death and you know they didn't do it. You have to tell a lie sometime, and no one tell the truth all the time, I'm sure of that.

3 Yes, with a weak reason, such as fear of punishment, avoidance of other unfavorable consequences to self, propriety, or statements in which S implies but does not specifically describe a socially accepted exception to the principle.

(1) General: If you lie people will not believe you even when you tell the truth.

(1) Yes. (q) Because if you tell a story all the time, when you tell the truth nobody won't believe you.

(1) Yes. Because one day you'll have to tell the truth and people will not believe you.

(1) Yes -- you could be lying and no one will believe you any more.

(1) Yes, they may never believe you.

(1) Yes. If you didn't tell the truth they might believe you, and they might not.

Score

3 (2) General: Doesn't pay to tell a lie; you won't get away with.

(2) Yes, you get caught in a lie.

(2) Yes,ma'am. (q) Tell a story they're going to catch up with you sometime.

(2) Yes. (q) If you tell a story you won't get by with it.

(3) General: Telling a lie will bring you punishment.

(3) Yes, you get a whipping.

(3) Yes. Story will easily get you in trouble.

(3) Yes,ma'am. Because tell truth you won't never get in any trouble.

(3) Yes. Because you get in a lot of trouble.

(3) No, they get in trouble.

(3) Yes. Tell tale you will always be in trouble. If you tell the truth you will always be all right.

(3) Yes -- if you're right, if you lie you get reported.

(3) Yes,ma'am. (q) Because if you tell a story and they find out we'll get in trouble. If you tell the truth you won't get in no trouble.

(3) Yes. You'll get suspended, too.

(3) Yes. If you keep telling stories you might get into trouble.

(3) Yes. People would say you didn't and then you'd be in trouble.

(4) General: Telling a lie may bring punishment to your group.

(4) Yes. The whole room will have to stay in.

(5) General: Yes, you should, but you can't always do so.

(5) Yes. Sometimes you can't help it if you're not telling the truth.

(Scoring Manual ECT Cont. Item 14)

Score

3 (6) General: Telling the truth is the proper thing.

(6) Yes,ma'am. (q) 'Cause it ain't polite not to tell the truth.

(6) Yes. (q) If you don't tell the truth it's bad.

(6) Yes,ma'am. (q) Because it's a sin to lie.

(6) Yes, it's courtesy.

(6) Yes. Better to tell truth. You tell story to teacher it would be not very polite. You want teacher to tell truth-- if you tell a story to teacher why should teacher tell truth to you?

(6) Yes,ma'am, we should. (q) 'Cause it's nice to tell the truth and you might not get no whippin' or either get punished.

(6) Yes. God has never did tell a story.

(6) Yes, it's better.

(6) Yes. Because it's more better.

(6) Yes,ma'am. Because it is right.

(6) Yes. 'Cause it's best.

(7) General: Telling lies could become a habit.

(7) Yes, bad not to -- if you do tell a lie keep on -- keep on,go head.

(7) Yes,ma'am. (q) 'Cause if you start the habit of story tellin' you'll not be able to stop.

(8) General: One cannot get anywhere unless one is truthful.

(8) Yes,sir, have to tell the truth to get around nowadays.

(8) Yes,ma'am. (q) Because if you tell a story it won't get you nowhere sometimes. (laughs)

(Scoring Manual ECT Cont. Item 14.)

Score

3 (9) General: If you lie,others will reject you.

(9) Yes. 'Cause if you don't tell the truth they'll never forgive you.

(0) General: One brings less trouble upon oneself if one is truthful.

(0) Yes. So no one won't bother us.

(01) General: Society will punish you if you lie.

(01) Yes. If you lie to the police, you'll still go to jail.

(02) General: One will be rewarded for telling the truth.

(02) Yes. Because if you tell the truth, you might get something.

(02) Yes. (q) Because when you tell the truth you always get by and get away with everything.

(03) General: Yes, always. You can tell the truth as well as you can tell a story.

(04) General: Gives an example showing when one should tell the truth.

(04) Sometimes. (q) Sometimes you have to tell the truth. (q) When somebody does something and somebody asks who did it you have to tell them, tell the truth.

(05) General: Gives a socially approved situation in which telling a lie is acceptable.

(05) Sometimes — when you are playing a joke on someone.

(06) General: Be truthful because of a desire to please God, desire to be rewarded by Heaven.

(06) Yes ma'am. (q)'Cause if you want to go to Heaven.

Score

3 (06) Yes, 'cause you will have a sin if you lie.

(06) Yes. Because don't tell the truth,God punish you.

(06) Yes, if you want to live long you have to tell the truth.

(06) Yes,ma'am. 'Cause it helps you and will do you good and God will be proud of you.

(06) Yes,ma'am. Because if you tell a story God don't like it.

(06) Yes -- that way you will not offend God.

(06) Yes,ma'am. (q) Because if you tell the truth,you live more longer.

(07) General: Tell the truth so you won't have to be afraid of supernatural punishment.

(07) Yes,ma'am. 'Cause you might go to the devil.

(07) Yes,ma'am. (q) 'Cause if you tell a story, when you're dead you'll go to Hell. I'd rather go to Heaven.

(07) Yes. Devil will get you.

(07) Yes. If you don't,you'll go down to the devil.

(07) Yes. When we tell stories,we go to Hell.

(07) Yes. God won't keep you -- send you back to the devil.

(08) General: Tell the truth, because a person in authority says so.

(08) Yes, the teacher says tell the truth.

(08) Yes. Your mother don't like you to tell a lie.

(09) General: The consequences are likely to be less unfavorable if you tell the truth.

(09) Yes, even if you are in trouble. Maybe your parents can help you.

Score

3 (09) Yes -- like if you do something -- stole something and you don't tell mother you stole it and the lady she probably saw you and she'll knock on door and say,"Miss,your child did something -- etc.," wouldn't get whippin' if told truth, if told truth come out easy for you.

(13) General: Your conscience will bother you if you don't tell the truth.

(13) Um hum, If you don't tell the truth you might have nightmares. If you do tell the truth you don't have nightmares. I have lots of nightmares.

(15) General: Your reputation will depend upon whether or not you are truthful.

(15) Yes,ma'am. (q) You is knowed by the truth,but if you tell a story you is knowed by a story.

(17) General: Telling the truth will make you better liked.

(17) Yes. Someone might like you more better.

2 Yes, with irrelevant reason or without a reason.

(1) General: Acceptable judgment without further elaboration, or don't know.

(1) Yeah. (q) Don't know.

(1) Yes --.

(1) Yes. (Talked under breath but couldn't be understood.)

(2) General: Acceptable judgment with virtual repetition of question; i.e, shouldn't, wrong, right, etc.

(2) Yes. You should; that's all.

(2) Yes. You shouldn't tell a story.

(2) Yes,ma'am, don't never give a lie.

Score

2 (2) Yes, not supposed to tell stories to grown people.

(2) Yes.(q) 'Cause you don't suppose to tell stories when things ain't true.

(3) General: Acceptable judgment with irrelevant reason.

(3) Yes. Police get you.

(3) Yes. You'll be friends with somebody.

(3) Yes. (q) If you should steal something from the store and they say you did it that's why you should tell the truth when you do anything wrong.

(3) Yes, ma'am. 'Cause if you get in some trouble you'll be telling a story.

(3) Yes. When you take somebody's pencil have to give it back to him.

(4) General: Acceptable judgment with bizarre reason.

(4) Yes, because if your mother be out and she be trying to get you something to eat and she can't get it, you would have to go without food and you will be bad.

(4) Yeah, 'cause something could happen to you and you could get run over by a car and get hurt.

(5) General: Acceptable judgment with inconsistent reason.

(6) General: Acceptable judgment with perseveration from previous question.

(7) General: Acceptable judgment with meaning unclear, or incomprehensible.

(8) General: Acceptable judgment with reason indicating failure to understand inquiry.

(9) General: Acceptable judgment with untrue reason.

(Scoring Manual ECT Cont. Item 14.)

Score

1 Uncertain.

Yes, with no evidence of awareness of the principle.

(1) General: No response.

(2) General: Don't know.

(2) I don't know.

(3) General: Failure to comprehend the question.

(4) General: Failure to comprehend the issue.

(5) General: Irrelevant statement or reason.

(6) General: Perseveration from previous question.

(7) General: Evasive answer.

0 No. No, for purpose of personal gain, indicating awareness of, but rejection of the principle.

No, with rationalization in terms of avoidance of punishment.

(1) General: Plain rejection of principle; wrong answer.

(1) No.

(2) General: Rejection of principle with projection.

(3) General: Rejection of principle with rationalization.

(3) It's all right to tell a lie to get out of getting a licking.

(4) General: Rejection of principle for material gain.

(5) General: Rejection of principle with egocentric motivation.

(6) General: Wrong answer with non-sequitur reason.

(7) General: Wrong answer with irrelevant reason.

(8) General: Awareness of meaningfulness of principle, but rejection of same.

(8) Well -- I don't always tell the truth, but it's best when it's nothing important.

(9) General: Rejection of principle with flagrant defiance of same.

(9) No. Not if you won't get caught.

(0) General: Rejection of principle with inconsistent reason.

## Special Scoring Problems in the Ethical Comprehension Test

### The Governing Criteria for Scoring

**Scoring of responses to the Ethical Comprehension Test is to be governed by statements of scoring criteria in the introductory section of the manual. Where a unique response does not seem to fit any of the scoring categories in the manual, the criterion statements in the introductory section should be referred to in assigning a score to that response.**

### Scoring Double Barreled Responses

**For double barreled responses falling in different scoring categories, neither of which is zero, assign the higher score to the item, and code the response number for that score. For double barreled responses one of which is zero, score zero and code the zero response number. For double barreled responses carrying the same credit, code both numbers.**

### Illustrative Specific Scoring Problems

**Item One** I'd try to fix it back.

(Scored 2)

**Item Two** I'd try to find the owner, and give it to him.

(Scored 3)

**In Item 1, trying to replace or pay for a broken item is not enough for a subject to receive a score of 3. He should accept responsibility for restitution. For Item 2, he is obligated only to make a serious attempt to find the owner of the lost article to receive a score of 3. He is responsible for the attempt, not for actually locating the owner.**

**Item Two** If I found the one it belonged to, I'd give it back.

(Scored 3)

If I know it, I'd take it to him.

(Scored 2)

If it had a name on it, I'd return it.

(Scored 2)

The first of the above three responses implies that the subject did something active to find the owner of the lost article; therefore, the response was scored three. The second two responses imply a more passive attitude on the part of the subject with respect to returning the lost object, and were therefore scored two.

Item Three No, because it might happen to you.
(Scored 4, coded 3)
No. Because you might make the same mistake.
(Scored 4, coded 8)

These two responses are coded differently because the first response refers to a general condition and the second response refers to a specific, possibly ludicrous act.

Item Three No, because it would hurt his feelings.
(Scored 4)
No. They'll feel bad and maybe one day they'll make fun of you.
(Scored 3)

As expressed by the subject, the main idea is the second statement of the fear of retaliation. The first clause, which by itself would be worth a score of 4, is in the second statement clearly subordinate to the main thought of the sentence, which is fear of retaliation. Therefore, this response is scored 3, while the first response is scored 4.

Item Three No. You should help people who need help.
(Scored 5)
No. I won't laugh. I'd show 'em how to do it.
(Scored 4)

The first statement is generalized beyond the bounds of the specific situation, and is therefore scored five. The second statement is not generalized beyond the bounds of the situation set up in the question, and is therefore scored 4.

Item Three No. 'Cause they don't know how to write in school.
(Scored 4)
They don't know anything and someone else do.
(Scored 4)
No. 'Cause person can't do it; 'cause can't read so good.
(Scored 4)

These responses are scored 4, and coded 01, because they convey the meaning that the subject spoken of in the question who could not do things as well as the person of whom the question was asked was unable to do so because of insufficient maturity or maturation. Therefore these responses were included in the same category with the other responses under the general category of "No, because they can't help it."

Item Three No. Because you could do it and he can't.
(Scored 4)
No. 'Cause we could do things that they can't do.
(Scored 2)

The first statement is scored 4 because it conveys the meaning that one should not make fun of someone who is incapable of doing something adequately. The second statement is considered to be a virtual restatement of the conditions given in the question, "Should you make fun of someone who can't do things as well as you can?" The second response is therefore scored 2.

An acceptable judgment with a reason which shows perseveration from a previous question is scored 2 and coded 6. When there is a statement which is mere perseveration from the previous question without an acceptable judgment, or where the perseverative statement indicates that the subject did not comprehend the question, his response is scored 1 and coded 6.

Item Three The other people.

(Scored 1, coded 3) For failure to comprehend the question.

Yes. Because I can help him.

Yes. Because you might learn him.

(Scored 1, coded 4.)

The first item is coded for failure to comprehend the question which was asked of the subject. The latter two responses are coded differently because it is apparent that the respondent did understand the question , but that he misinterpreted the frame of reference basic to the question. He failed to understand the issue involved. The difference in coding of items coded 1 (3) and items coded 1 (4), then, is that in the first type of response the subject does not understand the question and in the second he does not understand the issue involved in the question.

Item Three That would be wrong.

(Scored 3)

Not right.

(Scored 3)

Responses such as wrong and right are scored 2 when they are virtual repetitions of the question, i.e., when a question asks, "Is it all right to ___?" When a question asks, "Should you ______?" and a subject replies, "That is not right," he is given credit for attempting to convey a meaning of fitness or moral obligation, and his response is scored 3. The general statements for response categories under the criterion statements for scores of 2, 1, and 0 are intended to be approximately parallel for all items under which they are given. Where there are apparent discrepancies between the general category scored 2 and coded 2, and specific responses scored 3, examiners should score according to the specific response category under 3 rather than according to the general statement under 2.

Item Four Yes, because that's the school regulation. (Scored 4)
Yes, because it's the rule. (Scored 3)

Both responses express recognition of authority. The first response, however, in addition shows an understanding of the source of the patrol boy's authority as having come from the school and is therefore given the higher score.

Item Four Yes, so you won't get hurt.
(Scored 4)
Yes, So you won't get yelled at.
(Scored 3)

The first response receives a higher score because it recognizes the natural consequences of failure to obey a patrol boy, while the second response is scored 3 because it is motivated by fear of punishment for disobedience. Responses showing that the subject recognizes the functions of a person in authority are scored 4.

Item Four Yes. To go to school you cross when he says.
(Scored 4)
Yes, you have to obey him.
(Scored 2)

The second response is a bare repetition of the question asked the subject. In the first response the subject is given credit for giving an operational description of the patrol boy's functions which recognizes the subject's relationship to a person in authority carrying out his assigned role.

Item Four Because if a car comes and he tells you to stay back you supposed to stay.
(Scored 4, coded 3)
Yes.(q) He stand on the street and tell the cars to wait until you go past.
(Scored 3, coded 4)

The two responses are similar in that both describe functions of patrol boys. However, the first response is scored 4 because it also acknowledges the patrol boy's authority in such situations while the second response does not.

Item Four  Yes. Because that's the school regulation. (Scored 4, coded 5)

Yes. He works for the school. (Scored 4, coded 02)

Yes. He is just like a policeman. (Scored 4, coded 02)

Although the latter two responses are similar to the first, they are given different response codes. The essential meaning of the first is that one should obey a patrol boy because the school so requires. The essential meaning of the latter two responses is that one should obey a patrol boy because his authority has been delegated to him by an agent of society.

Item Five  Pick it up. Throw it away. You might fall on it and cut yourself. (Scored 3)

For a response to be scored 3 on item five, effective removal of the broken bottle is not required. In the illustration given, subject removes object, but gives a reason which shows concern only for self, rather than for others.

Item Five  Schematic Basis for Scoring Item 5

The basis for scoring Item 5 depends upon two factors. The first is how effectively the broken glass is removed, and the second is the reason motivating removal. It is possible to differentiate four levels of effectiveness of removal and four general reasons for removal.

On the basis of these classifications, it is possible to specify the score which different combinations of categories of removal and/or reasons for removal warrant. Table 2 provides a schematic diagram from scoring Item 5.

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Insert Table 2 about here

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Responses to item 5 of ECT may be classified according to reasons for removal of broken bottle as follows:

Good Reason for Removal of Broken Bottle

Someone might cut themselves.

Someone could fall on it.

So no one will get hurt.

Somebody may come by and fall and cut themselves.

Somebody could step on it and get cut.

Somebody with bare feet might come along and step on it and cut their feet.

Somebody might just be running and have on gym shoes and it go through it.

Somebody might come along with no shoes on and get cut.

'Cause it might cut someone's feet.

Cut someone.

So nobody will cut himself.

So bike won't get a flat.

If a bike be goin' it will get a flat tire.

A car could get a flat tire.

So no people won't step on it.

Somebody might hurt they foot on when they runnin'.

People will get glass in feet.

Someone might get cut on their legs.

If someone was to fall there they'd cut theirself.

'Cause maybe a baby will come along, not see it, and fall down and get hurt.

Weak Reason for Removal of Broken Bottle

It's dangerous.

Someone might trip over it.

Someone might put in their mouth.

So little boy may put it in his mouth and cut hisself.

(Weak Reason for Removal of Broken Bottle Cont.)

Isn't nice to leave it out on sidewalk, people can trip.

If somebody rides a bike or roller skating they might trip over it.

Then a boy coming and can break his leg.

Someone could fall.

Somebody else could fall.

Someone might trip over it and hurt themselves.

Poor Reason for Removal of Broken Bottle

Might cut myself.

Make the street look neater.

You might fall and cut yourself.

It looks junky on the sidewalk.

'Cause you're supposed to keep Chicago clean.

So you won't have no accident.

Get hurt, get cut.

You got to be careful.

So you won't step on it.

You can cut yourself.

Responses to item 5 of ECT may be classified according to effectiveness of removal of broken bottle as follows:

Effective Removal of Broken Bottle

Sweep it up.

Put it in garbage.

Pick it up and throw it in the garbage.

Supposed to take it and put it in the garbage.

Take it over to incinerator.

Pick it up.

Clean it up.

Take it off.

Put it in container.

Pick it up and put it in trash.

Put it in the waste basket.

Try to pick it up.

Try to clean it up.

Sweep it up in a dust pan.

Should pick it up and throw it in waste basket.

Git it off.

Remove it.

Clean it off.

I'd put it in the basket.

Carry it off.

Put it somewhere where nobody will get hurt.

Ineffective Removal of Broken Bottle

Kick it off.

Kick it on side.

Dig a hole and bury it.

(Ineffective Removal of Broken Bottle Cont.)

Knock it off the sidewalk.

Carry it around on other side of school yard and throw it away.

You should push it aside.

Put it into grass or dirt and put dirt all over.

Pick it up and throw it away.

Move it aside.

If I had a broom I'd sweep it up.

Kick it out.

Sweep it out.

Up.

Push it over.

Sweep it away.

Put it on the side.

Sweep it near the curb.

Push it to the side.

Pick it up and get it out of the way.

Throw it away.

Get it out of the way.

Inadequate Removal of Broken Bottle

Kick it in the street.

Throw it in the alley.

Pick it up and throw it in the alley.

Item Six    Yes. I don't know. (Scored 2)
I don't know. (Scored 1)

In the first response, subject gives the correct judgment, but does not give a reason. In the second response he does not give the correct judgment, but merely states that he does not know. The "don't know" in the first response referred to the reason, not the judgment.

Item Six    No, they'll supposed to be at school on time. (Scored 2)

This is an instance in which the total response must be scored. It is apparent from the youngster's response that by "No" he did not mean it is not wrong for a child to come late to school, but that he meant "No, a child should not come late to school." Response was therefore scored two rather than zero.

Item Eight    I'd bring it home to my mother. If we spend it, it's a sin. (Scored 2)
Give it to my mother because get change. (Scored 1)
Give it back to my mother - don't know. (Scored 1)
Give it to my mother. (Scored 0)

The first response implies that it is not right to keep money which was given in error; therefore, it was scored 2. The second and third responses were scored 1, because it is apparent that the subject did not understand the question. The way in which these responses were worded indicates that the child thought that he was getting the correct change rather than too much change; therefore, these responses were scored 1. In the last response there is no evidence that the subject misunderstood the question, and because the response as given expresses rejection of the principle, it is scored 0.

Item Nine    I'd rather do right. I wouldn't like to do wrong. (Scored 3)
Do right. I don't like to do wrong. (Scored 3)
Do right. It's better to do right than to do wrong. (Scored 2)

Item 9 Cont. Do right. 'Cause that's the right thing.
(Scored 2)
Do right. Because you're not to do wrong.
(Scored 2)
Rather do right. Because you shouldn't do wrong things.
(Scored 2)

The first two responses are scored 3, because they express an internalization on the subject's part of the prescribed standards of conduct of his society. The last four responses given above are scored 2, because they are considered mere restatements of the question, "Would you rather have a lot of money or do right?"

In determining whether a response such as "It's wrong", "It's not right", "It's not the nice thing to do", or "You shouldn't " are to be scored 3 or 2, close reference needs to be made to the wording of the question which was presented to the subject. If the question was "Should you", and the subject replies, "You shouldn't", this is a direct repetition of the question which was asked of him, and therefore the subject is not credited with giving a reason for his judgment. Similarly, if a question asked "Is it all right____?" and the subject replied, "That is not right", or "That is wrong", this, too, constitutes a virtual repetition of the question, and is therefore scored 2. For a subject to be given a score of 3 for a statement of moral obligation, fitness, or propriety, he is required to express more than a bare repetition of the question which was asked of him.

Item Nine Right. You can get further doing right. (Scored 4)
Do right, 'cause it don't pay to do wrong. (Scored 3)

The first response is scored four, because it implies that doing right is generally beneficial to a person in terms of long term personal goals, whereas the second response implies that a specific act of wrong doing is likely to result in unfavorable consequences, whether immediate or ultimate.

Item Nine Do right. Better to do right than steal. (Scored 4)
Do right. It's better to do right than wrong. (Scored 2)

Item Nine Cont.

The first response represents a low level of generalization. It is a very weak response for a score of 4. The question said nothing about stealing. It is impossible to be sure from the subject's verbalization whether he meant that gaining money for wrongdoing amounts to stealing. Since there was no evidence to the contrary, the subject was given the benefit of the doubt in scoring. The second response is scored 2, because it is a mere repetition of the question.

Item Ten No, it's just not good.
(Scored 3)
No. 'Cause you're doing wrong.
(Scored 2)

Since the subject was asked whether it is all right for him to take a candy bar from someone else's desk when no one was looking, and then was asked, "Tell me why", his response, "You're doing wrong", gives insufficient evidence that he is not merely repeating the question asked him. The first response is scored 3, because it is a statement of propriety or fitness which goes beyond the specific wording of the question asked.

Item Ten No, 'cause that's a sin.
(Scored 3)

Reasons expressing consistency with a moral code are scored 3.

Item Ten No. Because the candy bars are his property and it is not right to take things that belong to others.
(Scored 5)
No - you have to ask him for it, 'cause if you take something that don't belong to you, you won't be doin' what's right.

The first statement is generalized in terms transcending the bounds of the situation set up by the question, while the second statement is more specifically tied to the situation as given in the question.

Item Twelve No, teacher wants your work,not somebody else's. (Scored 4)

No, you should do your own work. (Scored 3)

No. (q) You shouldn't copy; you should write what you know.(Scored 3)

The latter two responses are statements of the proper thing to do or not to do with respect to the question asked, and therefore are scored 3. The first response is more generalized, but not generalized beyond the bounds of the situation set up in the question, and therefore is scored 4.

Item Twelve No.'Cause that's wrong. Don't supposed to copy when you have a test. (Scored 2)

The question asked was, "Is it all right for you to copy, too?" In replying, "That's wrong", or"You're not supposed to," the subject merely repeats the question asked him.

Item Twelve You'd be cheatin' that way. Teacher'd find out and you'd get a "U".(Scored 3)

This is an illustration of a response which needs to be interpreted as a whole. Although the first sentence by itself would be scored 4, the added sentence indicates that the two thoughts are closely related, and that the subject's correct judgment was motivated by fear of punishment.

Item Thirteen No, ma'am. Because he might run around and teacher catch him or either knock something down and break it and other kids begin to do their work and he come around and annoys them. (Scored 4, coded 6)

This is given a separate code number, because there are a number of elements in this response, two of which by themselves would be scored 3 and another of which would be scored 4. In this response, the subject describes a state of general disturbance caused by a child who makes noise and runs around the room, and states that this is disturbing to others. It is for the latter element in this response that a score of 4 is given.

## Prorating for Omitted Items of ECT

No item of the ECT should be omitted by design. In the event one or two items are accidentally omitted, however, it may be possible to obtain a fairly valid estimate of a subject's total ECT score by prorating. Table 3 should be used if prorating for omitted items is necessary.

Insert Table 3 about here

## 4. Validity and Reliability

In a search for criteria of concurrent validity for the GICT,it was considered reasonable that a test of general achievement should show a substantial correlation with CA, MA, and reading achievement.

Item analyses of the GICT were done on the 1957-58 testing in the Cooperative Research Project Matched-Pair Experiment. The validity data reported in this chapter were based on a cross-validation study of 1958-59 retest data on 566 EMH children, 8 to 15 years of age, inclusive, with IQ's of 50 to 74, inclusive. Table 4 provides a description of the sample on which these correlations are based.

Table 5 gives correlations between GICT scores and MA, extrapolated from the dates of the most recent Stanford-Binet examinations. References are made to two GICT total scores, one which includes a unit ECT score, and another which does not include an ECT score in the total. All items in the GICT except the ECT items were scored on a unit basis; i.e., as either right or wrong, with each item contributing one point to the GICT total score. Including the total ECT score, which was based upon summated ratings, would have weighted the GICT score unduly with an ethical comprehension component. Therefore, in order that each of the fourteen ethical comprehension test items be allowed to count only one point toward the total GICT score, a unit ECT score was derived. The unit ECT score was based on distributions of scores from the retest year data, as shown in Table 6. For each item on the ECT,the modal correct score was designated the unit score. A correct score was defined as a minimum score of three on six- and four-point scales and a minimum score of two on the three-point scale. The ECT unit scores referred to in Tables 5 to 9,inclusive, were derived in this manner.

Designation of a unit ECT score based on the modal correct score resulted in 5 items of moderate difficulty in terms of percent passing,and 9 easy items. A different criterion for designating the ECT unit score which would have provided a better proportion of items at different levels of difficulty might have been selected. A criterion based upon the correct score passed by the proportion of cases most proximate to 50 percent would have resulted in a distribution of eight items of moderate difficulty, with percents passing from 25 through 74 percent, four easy items with 75 percent or more passing , and two difficult items with fewer than 25 percent passing. Unit scores based on this criterion might have resulted in correlations differing from those reported in Tables 5, 7, 8, and 9. The rationale for the modal correct score, however, was preferred, and therefore this criterion was used as a basis for the determination of the unit ECT score, as reported in this chapter.

For the total sample, the correlations obtained between GICT total scores, with and without the ECT unit score, and MA were .79 and .81, respectively.

When correlations were computed on restricted CA ranges, they ranged from .38 and .40 for a sample of 66 eight and nine year olds to .62 and .64 for 160 ten and eleven year olds. For approximately the same range of talent, the correlation of .81 between the GICT and MA compares with a correlation of .65 between average reading on the Stanford Achievement Test and MA. The correlation between the GICT and average reading on the Stanford Achievement Test was .75, and the multiple correlation between GICT, average reading, and MA was .86. These correlations were based on 558 cases from the retest year data. In the computation of these correlations, the ECT unit score was excluded from the GICT total score.

Intercorrelations among the sub-tests of the GICT are given in Table 7. Except for the correlations between the ECT unit scale and the others, which are in the .40's and .50's, the rest of the intercorrelations range from .63 to .79.

Correlations between subtests of the GICT and total GICT score with the spurious effect of the subtest component removed from the total score are given in Table 8. Except for the ECT unit score-GICT correlation of .51, the others range from .74 to .84. By way of comparison, a correlation of .59 was obtained between the ECT total score and GICT minus the ECT, and an r of .56 between ECT total score and MA.

Kuder-Richardson Formula 20 Reliability Coefficients of the GICT and its subtests are given in Table 9. The K-R coefficient for the ECT Unit Score was .53, while those of the other subtests ranged from .74 to .86, and those of the total GICT, both with and without the ECT, were .94.

Insert Tables 4 to 9 about here

### 5. Reliability and Construct Validity of the Ethical Comprehension Test

During the 1957-58 school year, the Ethical Comprehension Test was administered to over 650 educable mentally handicapped children, ages 7 through 14, with Stanford-Binet IQ's of 50 to 74, inclusive. Approximately eighty-two percent of subjects were retested after a one-year interval. Table10 provides a description of the sample at the time of initial testing.

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Insert Table 10 about here

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#### Reliability

The test-retest reliability coefficient over a one-year interval for an N of 553 was .60. The test was split into two parallel halves approximately comparable in content and in item difficulty. Parallel half 1 consisted of items 1,3,4,8,11,12, and 13; parallel half 2 of items 2, 5, 6, 10, 7, 9, and 14. The split half reliability coefficient, corrected for attentuation, based on 100 cases selected at random from the entire sample was .78.

A consistency check was made on the agreement of independent scoring of ten protocols by ten examiners. Utilizing the intraclass correlation suggested by Ebel (1951), a reliability of individual examiner's scoring of .811 was obtained, with upper and lower limits at the five percent level of .894 and .595, respectively. As a further step to increase scoring consistency, examiners were instructed to submit cards on responses presenting scoring problems to a review committee. Hundreds of cards were submitted, reviewed, and the scoring decisions made incorporated into a revised manual.

#### Construct Validation

A construct validation study was conducted in an effort to demonstrate construct validity of the ECT. A nomological network was formulated, as follows:

It was hypothesized that a test of ethical comprehension should be related to a moderate but not high degree to mental age and to other tests of comprehension, but that in addition it should be moderately related to behavior, to attitudinal factors, and to motivation. Specifically, it was hypothesized that if a test of ethical comprehension for school children had validity, it should be related to teacher ratings of pupil adjustment, responsibility and motivation, and that pupils scoring high on ethical comprehension should impress psychological examiners and other clinicians as better adjusted and better motivated than children obtaining low scores on ethical comprehension. Further, it was postulated that scores on an ethical comprehension test should be related to certain personality dimensions derived from analysis of projective test protocols. Positive findings of relationships between the ECT and scales attempting to measure such dimensions as attitudes toward authority, socially approved value systems, and superego would be considered evidence of some validity of both test and criterion. Data for testing these hypotheses were available from the evaluation study conducted by the Chicago Cooperative Research Project. Results are shown in accompanying tables. A Pearson product moment coefficient of correlation of .56 was obtained between ECT total score and Stanford Binet MA extrapolated from dates of previous testing. This correlation was based upon first test data on 553 cases which were retested one year later. A correlation of .59, based upon 554 cases, was obtained between the ECT total scores and scores on total GICT minus ECT scores. Mean ECT scores progressed regularly with increments of CA and MA as shown in Table 12, and at the same time, standard deviations decreased with increasing MA, and with two exceptions, standard deviations also decreased with increasing CA.

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Insert Tables 11 and 12 about here

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Correlations with teacher ratings of adjustment and with examiner ratings of motivation and categorizations of adjustment were very low, but significantly positive. Correlations between scores on the ECT and scores on scales of responsibility, motivation, general adjustment, aggressiveness and passivity derived from Behavior Checklists made out by teachers were very low, but significant in the hypothesized directions, as shown in Table 13. Only one of seven significance tests relating ECT scores to tentative scales derived from Thematic Apperception Test and Michigan Picture Test protocol analyses was significant. The projective test data were based upon preliminary scales, however, and later analyses will be made with data from more refined scoring systems upon which work is under way at the time of the preparation of the present manual.

Since a substantial correlation was found between the ECT and mental age, it was necessary to determine whether the relationships found between the ECT and Behavior Checklist scales might be accounted for by an MA factor common to both the ECT and Behavior Checklist scales. The data presented in Table 15 show correlations between MA and the Behavior Checklist scales to be so low as to disconfirm the hypothesis that relationships between the Ethical Comprehension Test and the Behavior Checklist scales were due to a common factor of MA.

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Insert Tables 13, 14, and 15 about here

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Discussion

Cornbach and Meehl (1955) charge the test developer with the responsibility, in reporting construct validation, of making clear "(a) what interpretation is proposed, (b) how adequately the writer believes this interpretation is substantiated, and (c) what evidence and reasoning lead him to this belief." How adequate, with respect to validity and reliability, may the Ethical Comprehension Test be judged to be? Its reliability appears to be adequate for use in comparisons of groups of the type of subjects utilized in the present studies. Its stability, internal consistency, and scorer reliability for trained scorers are adequate for use in making comparisons between such groups. In content, the test looks like a test of ethical comprehension. It asks a subject to make judgments in situations involving ethical issues. The present manual, cataloging responses, renders public the scoring decisions made. This manual supports the test's claim to content validity. The test also correlates with other variables in a manner which may be expected of comprehension tests. Performance on the test is related at a moderate degree to mental age and to performance on an information and comprehension test. Test scores also progress with chronological age and mental age. Is there evidence from construct validity that this is a test of ethical comprehension? The data presented in this chapter is interpreted as indicating that this test, at least to some degree, measures a kind of comprehension which it is alleged to measure by its title. Relationships between this test and teacher derived measures of such dimensions as responsibility, motivation, passivity, aggressiveness, and general adjustment were in the direction, although not in the magnitude, hypothesized. Evidence in disconfirmation of one alternate inference to explain these results, i.e., that they may be accounted for by an MA factor common to the ECT and to the Behavior Checklist scales, was presented. Additional data on validity is needed. Evidence of concurrent validity through relationships with overt behavioral criteria should be sought. It would also be desirable to utilize the ECT in a longitudinal study in which the predictive validity of this test against later data on adjustment could be investigated.

Evidence for that part of the proposed nomological network respecting hypothesized relationships between the Ethical Comprehension Test and scales from thematic personality test data were essentially negative. How should these findings be interpreted? The findings are being reported, although they were based upon preliminary scales which are undergoing refinement. The members of the Cooperative Research Project Staff working on the development of the TAT-MPT scales take the view that it is not reasonable to expect significant relationships between single dimensions derived from these projective test data and the ECT. They hold that only combinations and relationships between the projective test data scales can yield meaningful personality data relevant to ethical comprehension and ethical behavior. Accordingly, it is proposed that new nomological nets involving patterns of personality scores from the projective test data be postulated and hypotheses derived therefrom tested against data not used in the present analysis.

## 6. Qualifications of Examiners

As an individual psychological test, the CICT should be administered only by psychologists or other fully qualified psychological examiners working under the supervision of psychologists.

Attaining satisfactory proficiency in scoring the Ethical Comprehension Test requires close study of the present manual and a degree of practice comparable to the training required for proficiency in administration of the Stanford-Binet or other individual psychological examinations. Without such training and attention to scoring standards, satisfactory reliability and validity cannot be depended upon.

## 7. Tables for Interpretation of Raw Scores

The data presented in the present monograph are based upon raw scores on the GICT and the ECT. The present studies were carried on with a sample of educable mentally handicapped children described in Tables 4 and 10 . These children were subjects in a matched-pair experiment. They constituted an urban sample of educable mentally handicapped children from predominantly low socio-economic communities of Chicago. Representativeness of the sample even with respect to urban educable mentally handicapped children is not claimed. Accordingly, it would be premature to offer norms for interpretation. Nevertheless, it is considered tenable to present data based upon the present study as a tentative frame of reference that might be used in categorizing the performance of educable mentally handicapped children on these tests. Tables of standard scores derived from our data for one-year chronological age intervals and five-point IQ intervals are presented in Table 16 for the GICT total score exclusive of the Ethical Comprehension Test score, and for the Ethical Comprehension Test in Table 17.

Both the GICT and the ECT standard score tables are based on standard score systems with means of 50 and standard deviations of 10. The ECT raw scores, however, were converted to T-scores, but the GICT raw scores were converted by means of a linear transformation. The GICT distributions were not normalized because the wide scatter of scores and the small samples resulted in a considerable number of raw scores within the range of a particular sample which had zero frequencies. Not normalizing distributions which included raw scores of zero frequency made it possible to extrapolate standard scores for raw scores unrepresented in our sample, providing, it was felt, a better interpretation of such scores than would have been obtained from normalizing these distributions.

Because of the small number of cases in our study with IQ's below 65, and because it is anticipated that the GICT and ECT would be most useful as diagnostic instruments in borderline cases of educable mental handicap, standard score tables are being offered for only the IQ intervals of 65 to 69, inclusive, and of 70 to 74, inclusive. It is recommended that GICT and ECT for IQ's below 65 be interpreted with reference to the tables for the 65 to 69 IQ interval.

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Insert Tables 16 and 17 about here

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## 8. Summary and Conclusions

The Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children is an individual test of information and comprehension designed to evaluate progress of educable mentally handicapped children in Health and Safety, Science, Ethical Comprehension, Practical Arithmetic, and Social Studies. At the same time, its items are designed to measure progress toward formulated curricular objectives. Being an oral test, obtained scores are uninfluenced by reading or spelling handicaps, and comparisons uncontaminated by reading handicaps may be made of achievements in the different areas covered by the test.

The internal consistency coefficient of the GICT, as determined by the Kuder-Richardson Formula 20, is .94, indicating that the full scale GICT possesses reliability adequate for utilization in individual diagnosis. The reliabilities of the sub-tests are adequate for group comparisons of progress. The Unit Scale of the ECT derived in the manner discussed in Chapter 4 of this manual, with a range of 0-14, is the weakest of the subtests from the standpoint of reliability. The total ECT score, based upon summated ratings, with a range of 0-63, has satisfactory stability, internal consistency, and interscorer reliability.

Intertest correlations among all of the subtests except the ECT Unit Score are so high as to raise the question of independence of these tests. Inspection of the content of the subtests, however, makes it clear that except for the similarity of the Health and Safety and Science tests, the content of the other subtests is dissimilar except insofar as all are information and comprehension tests. The high intercorrelations among the GICT subtests is consistent with the Wechsler Bellevue findings of the highest intertest correlations to be those between Information and Comprehension, Information and Similarities and Comprehension and Similarities. The Wechsler Bellevue intercorrelations among these subtests were in the high 60's and low 70's. Our correlations are also consistent with, but higher than, the WISC subtest intercorrelations, Tables 4-6 of the WISC manual report correlations in the 60's between Information and Comprehension and Information and Arithmetic for age 10½ and 13½. They are also higher than the subtest-full WISC scale correlations for mentally handicapped children reported by Schwartz and Levitt. Interestingly enough, the lower correlation between GICT and MA at ages 8 and 9 than at later ages which we obtained has a parallel in the lower correlations between Information and WISC Verbal Scale, and Comprehension and WISC Verbal Scale at ages 7½ than at ages 10½ and 13½, reported in the WISC manual. That a general learning ability factor is common to all of the GICT subtests is highly probable in view of the high correlations obtained between information and comprehension tests and the Full Scale and Verbal Scale IQ's obtained by Wechsler and the even higher correlations between the GICT and Binet mental age reported in this study.

The high intercorrelations among the oral information and comprehension tests in this study suggest that, contrary to widely held beliefs, the achievements of educable mentally handicapped children in different content areas of the curriculum are closely related. Our findings indicated that, as a group, EMH children who are achieving tend to perform with remarkable consistency in the different curricular areas.

Although comparison of magnitudes of correlations from study to study are hazardous in view of the effect of range of talent upon the correlations obtained, the correlation between the GICT and Stanford-Binet MA approximates correlations obtained between the Wechsler-Bellevue and the Stanford-Binet and and between the Verbal and Performance Scale of Wechsler and WISC for normal subjects. For a more restricted range of talent, the obtained correlation between GICT and MA in this study was somewhat higher than the correlations between Wechsler-Bellevue and Stanford-Binet IQ's of retarded adults reported by Stacey and Levin. (Stacey and Levin , 1950)

The multiple correlation between GICT, MA and Average Reading on the Stanford Achievement Test was .86. The GICT total scores in this validity study did not include the ECT subtest score. These correlations indicated that the GICT possesses adequate validity to justify employment as a supplement to the Stanford-Binet, Wechsler-Bellevue, and WISC in the diagnosis of educable mental handicap in borderline cases. For the time being, such use should be limited to tentatively diagnosed EMH children ten years of age or older.

The Ethical Comprehension Test Unit Scale employed in this study adds little to the GICT total scale with respect to validity or reliability of the GICT as a whole. A much more reliable score of the ECT is available, however— the total ECT score, which is based upon 6-, 4-, and 3-point scoring of each response. The total ECT score was not added to the sum of the other subtests in deriving a total GICT score to avoid undue weighting of the GICT with the Ethical Comprehension component. Ethical Comprehension is of interest in itself as a criterion in evaluation research, however.

Reliability of the total ECT score, in terms of stability, internal consistency, and scorer reliability was shown to be adequate for use in comparisons between groups of educable mentally handicapped children. Content validity of the ECT is supported by the detailed manual, which presents frames of reference for scoring and an extensive catalog of coded and scored responses. Some evidence of construct validity of the test has been presented in this manual. As yet, lower and upper estimates of validity cannot be made.

It is premature to recommend the ECT for use in individual diagnosis. It is believed, however, findings reported in this paper indicate that the test merits further research use in normative studies, and in studies of the measurement, development, and modifiability of ethical concepts.

Although the findings presented in this paper are based upon use of the ECT with educable mentally handicapped children, it is believed that they indicate that the test merits further use in research on the measurement of ethical comprehension and the development of ethical concepts of normal as well as of educable mentally handicapped children.

## 9. Indicated Further Research

The Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children was devised for the purpose of evaluating the achievement of educable mentally handicapped children. The data reported in this paper were based on use of the instrument with an EMH population, and our findings may properly be applied only to a population similar to the one employed in this study. Our present findings indicate that this test is more reliable at ages 10 and above than below that age. Data based on the use of this instrument in the 1957-58 year, which was not reported in this paper, indicate that the GICT is probably satisfactory beginning with age 9. It may be that the lower correlation between the GICT and MA at the 8 and 9 year level than at later ages may in part be accounted for by the smaller N and narrower range of talent employed in the 8 and 9 year-old group. Further study of the GICT with educable mentally handicapped children at earlier ages, and the development, if necessary, of a lower level of the test appears to be indicated. It would be equally feasible to extend the GICT upward to develop a level of the test appropriate for use with secondary educable mentally handicapped children and with average elementary school children.

A group test of general information and general comprehension written at a third or fourth grade reading level would be a valuable evaluation instrument for use with secondary school educable mentally handicapped children and with "normal" children who have academic disabilities. Psychologists have been looking for a brief individually administered screening test for the purpose of identifying young intellectually gifted children. It would be interesting to attempt to develop such a screening device from the items in this test.

The writing of items for the GICT was oriented toward curricular objectives as well as toward curricular content areas. It would be possible to develop keys for curricular objectives such as economic competence, citizenship, protecting life and health, etc.

On the basis of the GICT data available at the time of preparation of the present manual, it would be premature to offer definite inferences with respect to diagnostic uses of the GICT. It is considered justifiable, however, to suggest research investigating hypotheses suggested by clinical use of the test. Research studies which might contribute to the evaluation of the GICT as an instrument of psychological diagnosis would include studies of discrepancies between GICT scores and MA, socio-economic and cultural influences on the GICT performances of EMH subjects, and GICT responses reflecting specific academic deficiencies.

Like other verbal tests, and particularly like other information tests, the difficulty of specific items of the GICT is subject to the influence of time and current events. Periodic revision of items, scoring standards, and norms should be undertaken.

Results reported in this paper are based on raw scores. A priority task for future research should be the establishment of chronological age norms for educable mentally handicapped children based upon a standard score system.

Table 16 shows a number of items on the ECT to have bimodal-type distributions, with zero scores in excess of one scores. This trend is particularly noticeable in Items 4, 5, 6, 7, and 12. The significance of zero and one scores on the ECT for personality diagnosis would be well worth investigating. With the exception of Item 5, which though scored consistently, was probably scored too leniently, five-point scores were extremely rare in the records of EMH children. The possible significance of "five"scores for the diagnosis of psuedo-retardation might also be worth investigating.

In the manual on the ECT, responses were classified and coded in a manner intended to facilitate qualitative analyses of ethical judgments. Discrepancies

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between ECT scores and IQ might be studied with reference to types of responses resulting in unexpectedly high or low ethical comprehension scores; for example, responses expressing empathy, consideration for others, or fair play, on the one hand, and fear of punishment or expectation of reward on the other. In turn, the expression of such attitudes in the ECT may be related to variables in the parent-child relationship and to community influences.

Studies of the predictive validity of psychological tests have been too infrequent. Studies relating earlier performance on the GICT with progress in academic achievement would provide important evidence relative to the predictive validity of the GICT. A longitudinal study relating earlier performance on the ECT to behavioral data on later adjustment would provide data on the predictive validity of the ECT.

Chicago Board of Education
Cooperative Research Project

## Appendix A.

## The Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children

The Chicago Test of General Information and General Comprehension

for Educable Mentally Handicapped Children

| | | Col. | Punch |
|---|---|---|---|
| Child's Name: ______ | Set No: ______ | 1 | ____ |
| Case No: ______ | | 2-5 | ____ |
| Date of Birth: ______ | Age: (years) ______ | 6-7 | ____ |
| IQ: ______ | Date of Examination: ______ | 8-9 | ____ |
| Case number if in Methods Experiment: ______ | | 10-13 | ____ |
| Community Rating, Home School: ______ | | 14 | ____ |
| Examiner: ______ | | 15-16 | ____ |

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

TEST OF HEALTH, PHYSICAL EDUCATION, AND SAFETY

| Col. | + | - | Item |
|---|---|---|---|
| 17 | 1 | 3 | 1. How often should you brush your teeth? ______ |
| 17 | 5 | 7 | 2. What should you do before you cross the street? ______ |
| 18 | 1 | 3 | 3. What color light tells us when to cross the street? ______ |
| 18 | 5 | 7 | 4. If a stranger offers you a ride in his car you should— ______ |
| 19 | 1 | 3 | 5. Why should we be very careful with gasoline? ______ |
| 19 | 5 | 7 | 6. Why should we be careful of worn out electrical cords? ______ |
| 20 | 1 | 3 | 7. In what game do you use a bat? ______ |
| 20 | 5 | 7 | 8. Name three games in which you use a ball. ______ |
| 21 | 1 | 3 | 9. Why should we cover our mouth when we cough? ______ |

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## The Chicago Test of General Information and General Comprehension
## for Educable Mentally Handicapped Children

| | Col. | Punch |
|---|---|---|
| Child's Name: ____________ Set No: ____________ | 1 | ____ |
| Case No: ____________ | 2-5 | ____ |
| Date of Birth: ____________ Age: (years) ____________ | 6-7 | ____ |
| IQ: ____________ Date of Examination: ____________ | 8-9 | ____ |
| Case number if in Methods Experiment: ____________ | 10-13 | ____ |
| Community Rating, Home School: ____________ | 14 | ____ |
| Examiner: ____________ | 15-16 | ____ |

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### TEST OF HEALTH, PHYSICAL EDUCATION, AND SAFETY

| Col. | + | - | Item |
|---|---|---|---|
| 17 | 1 | 3 | 1. How often should you brush your teeth? ____________ |
| 17 | 5 | 7 | 2. What should you do before you cross the street? ____________ |
| 18 | 1 | 3 | 3. What color light tells us when to cross the street? ____________ |
| 18 | 5 | 7 | 4. If a stranger offers you a ride in his car you should-- ____________ |
| 19 | 1 | 3 | 5. Why should we be very careful with gasoline? ____________ |
| 19 | 5 | 7 | 6. Why should we be careful of worn out electrical cords? ____________ |
| 20 | 1 | 3 | 7. In what game do you use a bat? ____________ |
| 20 | 5 | 7 | 8. Name three games in which you use a ball. ____________ |
| 21 | 1 | 3 | 9. Why should we cover our mouth when we cough? ____________ |

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PRECEDING PAGE MISSING

General Achievement Test

**Test of Health, Physical Education, and Safety**

| Col. | + | - | Item |
|---|---|---|---|
| 21 | 5 | 7 | 10. What is a good breakfast? ______ |
| 22 | 1 | 3 | 11. Name three things we can drink that are good for us. ______ |
| 22 | 5 | 7 | 12. Why do we put food in the refrigerator? ______ |
| 23 | 1 | 3 | 13. Why is'nt it good for us to eat too much candy? ______ |
| 23 | 5 | 7 | 14. Why should we keep flies away from food? ______ |
| 24 | 1 | 3 | 15. Why should you clean out a cut if you cut yourself? ______ |
| 24 | 5 | 7 | 16. Why is it important for us to get vaccinations or things like polio shots? ______ |
| 25 | 1 | 3 | 17. Why do we have fire drills in school? ______ |
| 25 | 5 | 7 | 18. Why should oily rags never be left in a closet or a box? ______ |
| 26 | 1 | 3 | 19. What is the stomach for? ______ |
| 26 | 5 | 7 | 20. What are the lungs for? ______ |

27 -28 ______ Total Score

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## TEST OF SCIENCE

Name of Child: ____________________ Date of Birth: __________ School: __________

| Col. | + | - | Item |
|---|---|---|---|
| 29 | 1 | 3 | 1. Bob wanted to take an apple to school. Why did he wash the apple before putting it in his lunch bag? ______________ |
| 29 | 5 | 7 | 2. We burn many things to keep us warm. Name two things people burn to heat their homes in winter. ______________ |
| 30 | 1 | 3 | 3. How does the sun help us? ______________ |
| 30 | 5 | 7 | 4. (Place scrambled pictures in front of child.) Put the pictures in the right order to show how the plant grows. |
| 31 | 1 | 3 | 5. How do trees help us? ______________ |
| 31 | 5 | 7 | 6. Name two things that plants need to make them grow. ______________ |
| 32 | 1 | 3 | 7. There was some ice on Mr. Smith's sidewalk. He was afraid people would fall. What would make the ice on the sidewalk melt? ______________ |
| 32 | 5 | 7 | 8. Why do we listen to the weather report on the radio or television? ______________ |
| 33 | 1 | 3 | 9. Can you name the seasons of the year for me? ______________ |
| 33 | 5 | 7 | 10. When you see the sun directly above you in the sky, about what time of day is it? (1) Early morning (2) Noon (3) Late afternoon. ______________ |
| 34 | 1 | 3 | 11. Look at the thermometer to find out how hot or cold it is. (Point to the thermometer showing 104°). Would you go swimming or ice skating? ______________<br>(Examiner points to the thermometer showing -10°). Would you see a garden with flowers and vegetables or would you see a tree with no leaves? ______________<br>(Examiner points to the thermometer showing 70°). Would you see a child playing baseball or playing with a sled. ______________ |

4

**General Achievement Test**
**Test of Science**

| Col. | + | - | Item | |
|---|---|---|---|---|
| 34 | 5 | 7 | 12. | Electricity makes some things go. What are three things that are run by electricity? |
| 35 | 1 | 3 | 13. | What happens to water when it is placed over a very hot fire? |
| 35 | 5 | 7 | 14. | John left a little water in a saucer on his desk. The next morning the water was gone. No one threw out the water. Where did it go?<br>(If the child says "It dried up", ask him what caused it to dry up?<br>(Or if the child says "It disappeared," then ask "Where did it go? |
| 36 | 1 | 3 | 15. | Johnny's coat caught on fire because he got too close to a bonfire. His mother quickly threw a blanket around him and put out the fire. Why did the blanket put out the fire? |
| 36 | 5 | 7 | 16. | Why is it dangerous to start the motor of a car in a garage with the windows and doors closed? |
| 37 | 1 | 3 | 17. | John is 70 lbs. Tom is 100 lbs. They are on the teeter-totter. Who will have to sit farther back on the teeter-totter?<br>Why? |

38-39 ______________________ Total Score

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Cooperative Research Project

## TEST OF ETHICAL COMPREHENSION

Child's Name: ____________________ Date of Birth: ______________ School: ______________

| Col. | Punch See Code | Item | |
|---|---|---|---|
| 40 | 5 4 3 2 1 0 | 1. | What would you do if you broke something that belonged to someone else? |
| 41 | 5 4 3 2 1 0 | 2. | What would you do if you found something that belonged to someone else? |
| 42 | 5 4 3 2 1 0 | 3. | Should you make fun of someone who can't do things as well as you can? Tell me why. (If child says, "Because," ask, "Because why?" but do not press too hard.) |
| 43 | 5 4 3 2 1 0 | 4. | Do you really have to do what a patrol boy tells you to do? Why? |
| 44 | 5 4 3 2 1 0 | 5. | What should you do if you see a broken bottle lying on the sidewalk? Tell me why. |
| 45 | 5 4 3 2 1 0 | 6. | Is it wrong for a child to come late to school? Tell me why. |
| 46 | 5 4 3 2 1 0 | 7. | If a person has been mean to you, would you like to see that person get hurt? |
| 47 | 5 4 3 2 1 0 | 8. | What would you do if your mother sent you to the grocery store to buy some food and the grocer gave you too much change? Tell me why. |
| 48 | 5 4 3 2 1 0 | 9. | Suppose you could make a lot of money if you did wrong. Tell me, would you rather have a lot of money, or do right? Tell me why. |
| 49 | 5 4 3 2 1 0 | 10. | If another child has three candy bars in the desk, and you want one, is it all right for you to take one if no one is looking? Why? |
| 50 | 5 4 3 2 1 0 | 11. | Is it all right to take a ride on someone else's bicycle without asking them, if they left the bicycle outside? Tell me why. |
| 51 | 5 4 3 2 1 0 | 12. | If everyone else is copying in a test, is it all right for you to copy too? Tell me why. |
| 52 | 5 4 3 2 1 0 | 13. | Is it all right for a child to make noise or run around the room when the teacher is not there? Tell me why. |
| 53 | 5 4 3 2 1 0 | 14. | Should we always tell the truth? (If answer is yes, say, "Why?" If answer is no, ask, "When do you think that it is all right to tell a lie?" |

54-55 ______________________ Total Score
56-57 ______________________ Unit Score

Chicago Board of Education
Cooperative Research Project

## SOCIAL STUDIES

Name of Child: ______________________ Date of Birth: ____________ School: __________

| Col. | + | - | Item |
|---|---|---|---|
| 58 | 1 | 3 | 1. When is your birthday? ____________ |
| 58 | 5 | 7 | 2. Where were you born? ____________ |
| 59 | 1 | 3 | 3. Whose is this? (E's possession) and Whose is this? (Child's possession?) Whose is this? (School's possession-desk, table, etc.)<br>____________<br>____________ |
| 59 | 5 | 7 | 4. Tell me the name of a movie you go to. Where is it? (If child says he does not go to a movie, ask: Tell me the name of a movie in your neighborhood.) ____________<br>____________<br>____________ |
| 60 | 1 | 3 | 5. Where do you go to mail a package? ____________<br>____________ |
| 60 | 5 | 7 | 6. Where do you go to cash a check? ____________ |
| 61 | 1 | 3 | 7. Where do you go to buy a hammer and tacks? ____________<br>____________ |
| 61 | 5 | 7 | 8. What does a policeman do? Name at least 2 things. ____________<br>____________ |
| 62 | 1 | 3 | 9. How do you get to (main intersection about 1 mile from school)?<br>Examiner's Location: (Orientation) ____________<br>Subject's response: ____________<br>____________<br>____________<br>And: How do you get downtown? ____________<br>____________<br>____________ |

**Page 2. Social Studies**

Name of Child ______________ Date of Birth: ______________ School: ______________

| Col. | + | - | Item |
|---|---|---|---|
| 62 | 5 | 7 | 10. Who is the Mayor of Chicago? ______________ |
| 63 | 1 | 3 | 11. In what county is Chicago? ______________ |
| 63 | 5 | 7 | 12. What is the name of the country in which we live? ______________ |
| 64 | 1 | 3 | 13. Who is the president of the United States? ______________ |
| 64 | 5 | 7 | 14. What is the name of your state? ______________ |
| 65 | 1 | 3 | 15. Point out the state you live in on the map. ______________ |
| 65 | 5 | 7 | 16. Who discovered America? ______________ |
| 66 | 1 | 3 | 17. Who was George Washington? ______________ |
| 66 | 5 | 7 | 18. How many stars are there in our flag? ______________ |
| 67 | 1 | 3 | 19. What do they stand for? ______________ |
| 67 | 5 | 7 | 20. When you work and earn money, some of your money will be kept out of your pay check. What for? ______________ |
| 68 | 1 | 3 | 21. How much sales tax do we pay on each dollar? ______________ |
| 68 | 5 | 7 | 22. Where would you find snow all year around? ______________ |
| 69 | 1 | 3 | 23. Where do oranges grow? ______________ |
| 69 | 5 | 7 | 24. Here is a map of the United States. Show me which is N-S-E-W. (Score + for either N and S or E and W.) |
| 70 | 1 | 3 | 25. Name one country that borders on the U. S. ______________ |
| 71-72 | | | ______________ Total Score |

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Cooperative Research Project

## ARITHMETIC

**Name of Child:** ______________________ Date of Birth: ____________ School: ____________

| Col. | Punch | Item |
|---|---|---|
| 73 | 1 3 | 1. Here is some money. (Examiner will give child 5 pennies, 3 nickels, 2 dimes, 1 quarter, 1 half dollar.) Can you tell me the name of this coin? (Examiner shows child the half dollar.) ____________ |
| 73 | 5 7 | 2. Hand me eight coins. I will count them now, to see if that's right. (Put out in left-to-right order in front of the child.) Now point to the third coin. ____________<br>(Child must point to the third coin from his left). |
| 74 | 1 3 | 3. Now give me seven cents. ____________ |
| 74 | 5 7 | 4. (Return it) Now give me forty-six cents. ____________ |
| 75 | 1 3 | 5. Count all of the money I just gave you and tell me how much is there. ____________ |
| 75 | 5 7 | 6. Suppose I am looking for a birthday present to give to someone, and I find two things I think that person would like. One has a price tag with this mark on it (15¢), and the other has a price tag with this mark on it ($15). Which one costs more? (Ask the child to read both price tags to be sure that he is giving the answer because of understanding, not by just chance.) ____________ |
| 76 | 1 3 | 7. Here is a ruler. How long is it? ____________ |
| 76 | 5 7 | 8. Here is a card. (Examiner hands child a 4 X 6 index card.) Measure it and tell me how long it is. ____________ |
| 77 | 1 3 | 9. How wide is it? ____________ |
| 77 | 5 7 | 10. Look at this clock and tell me what time it is. (Examiner sets clock at 9:30.) ____________ |
| 78 | 1 3 | 11. at 8:20.) ____________ |
| 78 | 5 7 | 12. at 4:43.) ____________ |

Page 2- Arithmetic

| Col. | Punch | Item |
|---|---|---|
| 79 | 1 3 | 13. What month comes just after the month your birthday is in? ______ |
| 79 | 5 7 | 14. Here is a calendar. Find the month that has your birthday in it. (Orientation question--not scored.) What day does (or) did your birthday come on this year? ______ |
| 80 | 1 3 | 15. Do you know how many months there are in a year? How many? ______ |
| 80 | 5 7 | 16. Name them. ______ ______ ______<br>______ ______ ______<br>______ ______ ______<br>______ ______ ______ |
| 81 | 1 3 | 17. If you were sent to a doctor's office in a large downtown building and were told to go to room 1724, what floor would you tell the elevator man you wanted to go to? ______ |
| 81 | 5 7 | 18. A delivery man has a package to deliver to 1739 State Street. As he drives down the street he reads the numbers on the building, looking for 1739. He reads 1712, 1738, and 1748. Where will he have to look to find 1739? ______ |
| 82 | 1 3 | 19. If I tell you a telephone number is State 2-1507, show me how you would dial it on the telephone. I will write the number down for you. Here it is. (Examiner will write the number in full, being sure to capitalize the "S" and "T", the other numbers small letters.) ______ ______ |
| 82 | 5 7 | 20. Suppose you are using the telephone to make a long distance telephone call. What number will you tell the operator you are calling from when she asks you? ______ |

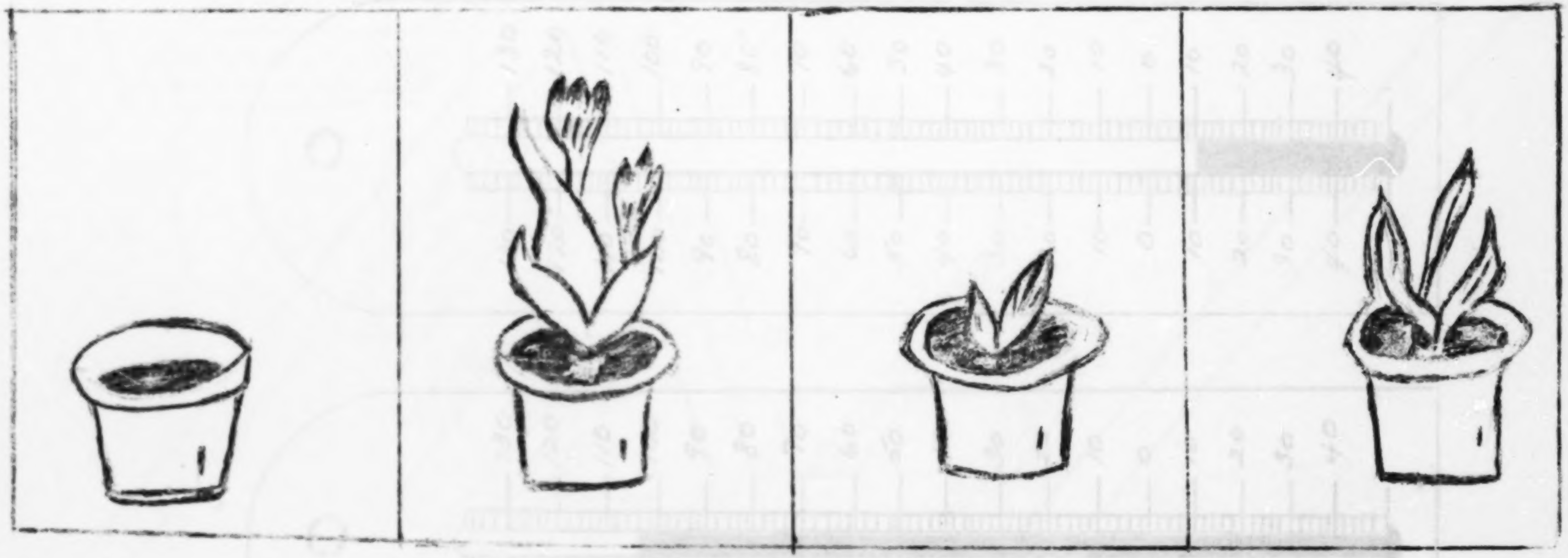
83-84 ______ Arithmetic Score

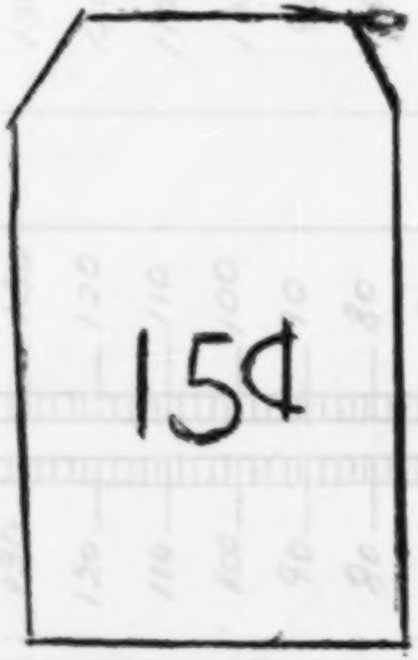
85-86 ______ Total Score, exclusive of Part III

87-88 ______ Total Score

## Appendix B

### Test Materials Used in Administration of The Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children

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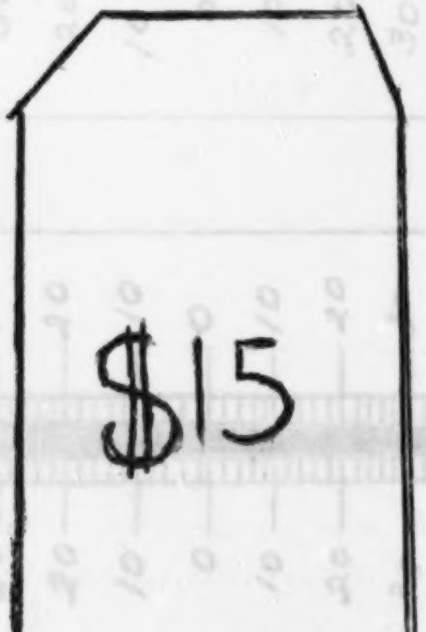
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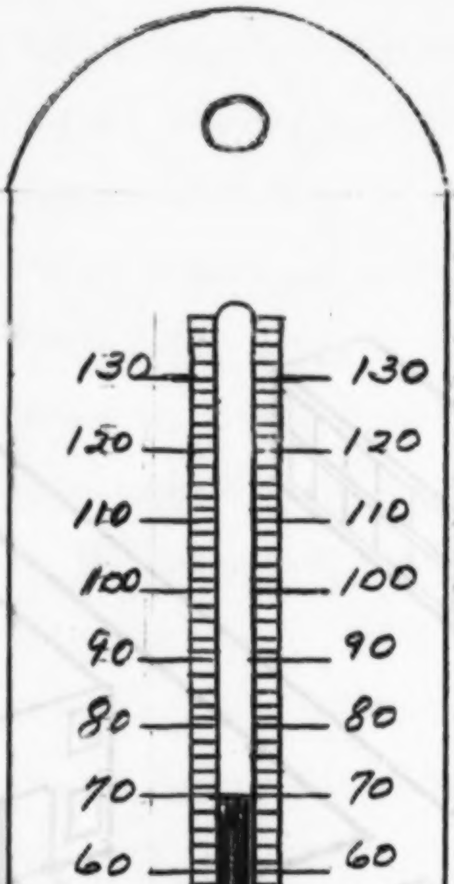
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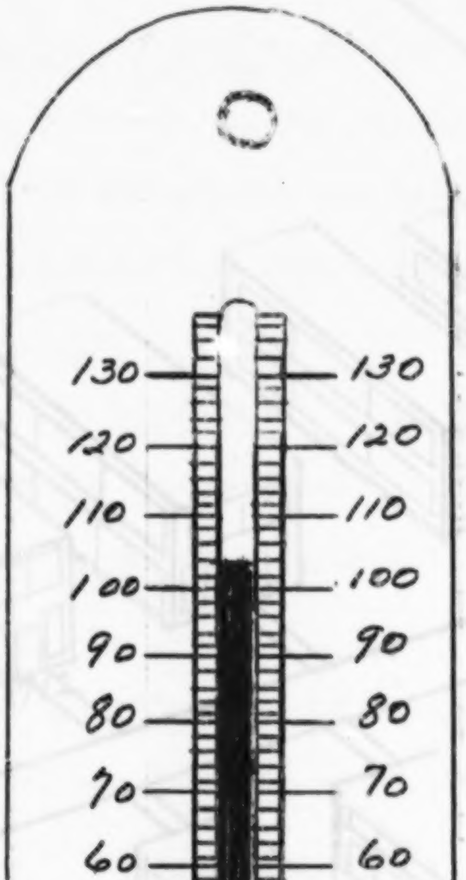
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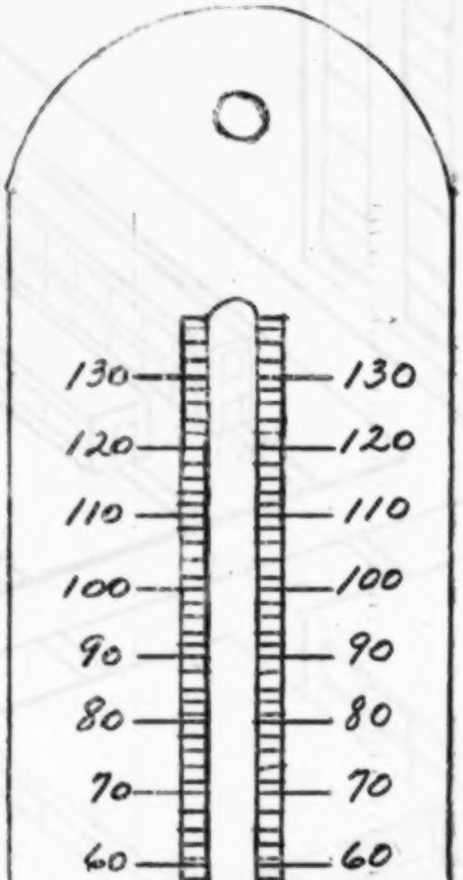
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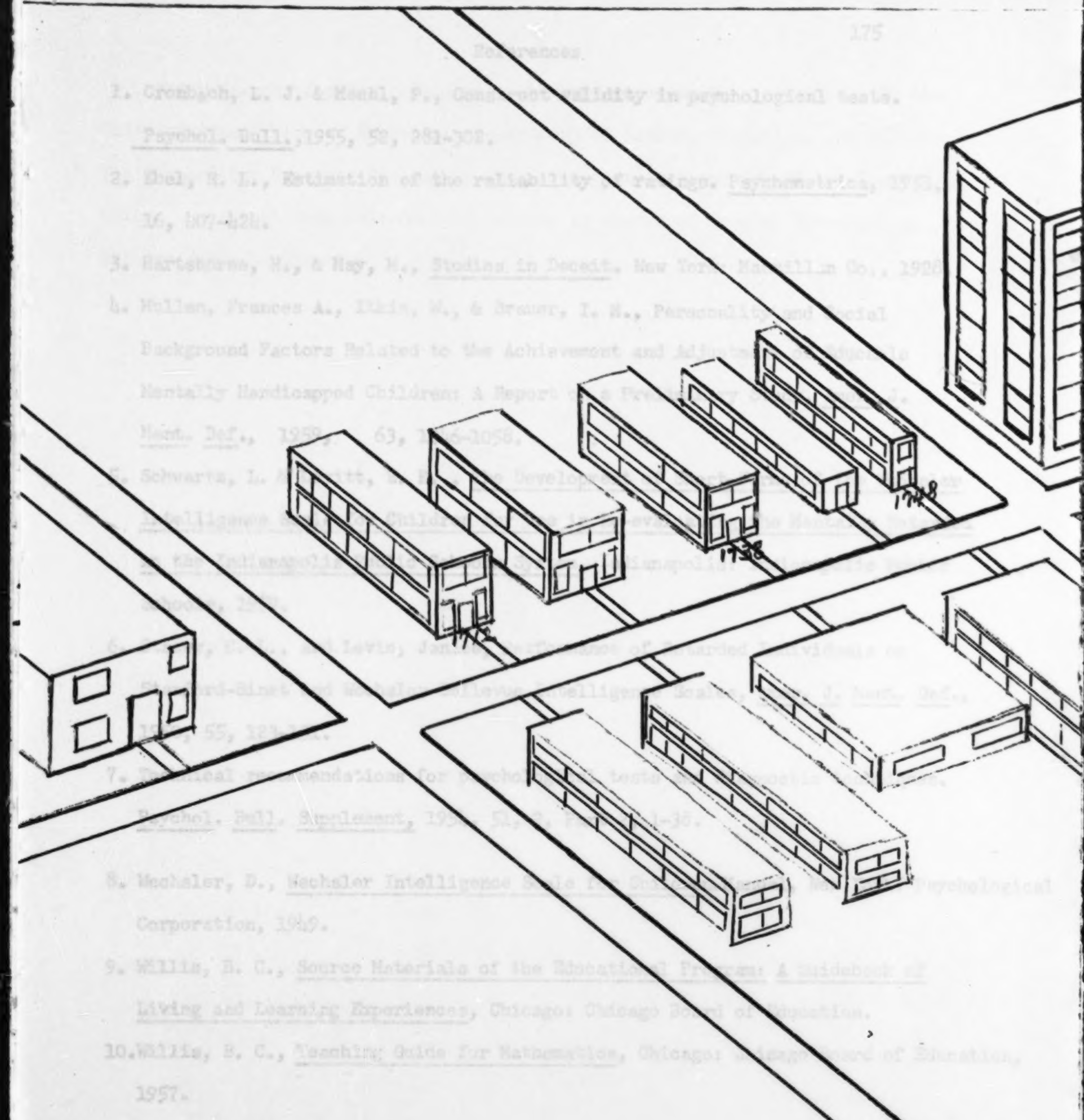

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## Footnotes

1. The research reported herein was performed pursuant to a contract with the United States Office of Education, Department of Health, Education, and Welfare. The Cooperative Research Project is under the general direction of Dr. Frances A. Mullen, Assistant Superintendent of Schools in Charge of Special Education. William Itkin is Director.

Table 1

Test Materials Used in Administration of GICT

| Subtest | Item | Materials used |
|---|---|---|
| Science | 4 | 4 pictures of potted plants 2½" X 3-3/8".[a] |
| Science | 11 | 8½" X 11" sheet with black and white pictures of three thermometers, the first 70°, the second 104°, the third -10°.[a] |
| Social Studies | 15 | 8½" X 11" outline map of the United States with name of states designated.[b] |
| Social Studies | 24 | 8½" X 11" outline map of the United States with names of states designated.[b] |
| Arithmetic | 1-5, inclusive | $1.15 in change: one half dollar, one quarter, two dimes, three nickels, five pennies. |
| Arithmetic | 6 | Two price tags, 1-3/4" X 2-3/4", one $15 the other 15¢.[a] |
| Arithmetic | 7 | 12" ruler |
| Arithmetic | 8,9 | 4" X 6" index card. |
| Arithmetic | 10-12, inclusive | 4" X 4" clock face.[c] |
| Arithmetic | 14 | 1½" X 3" monthly calendar of current year. |
| Arithmetic | 18 | 8½" X 11" drawing of apartment house block.[a] |
| Arithmetic | 19 | 4" X 6" card with telephone number STate 2-1507. |
| Arithmetic | 19-20 | Authentic telephone dial with number ALbany 2-0130.[d] |

[a] Illustrated in Appendix B.

[b] Manufactured by McKinley Map Co., Philadelphia, Pa.

[c] Manufactured by Ideal School Supply Co., 8316 S. Birkhoff, Chicago, Ill.

[d] Illinois Bell Telephone Company.

## Table 2

### Schematic Diagram for Scoring Item 5 of Ethical Comprehension Tes

| Levels of Effectiveness of Removal | Levels of Reasons for Removal | | | |
|---|---|---|---|---|
| | **Good reason:** Indicates concern for welfare and for property of others and awareness of the realistic danger presented by the broken glass, e.g., Someone might cut themselves; Someone could fall on it. | **Weak reason:** Although the response indicates concern for the safety and/or welfare of others,it does not state the most relevant, specific danger presented by the glass, e.g., It's dangerous; Someone might put in their mouth. | **Poor reason:** Does not indicate that concern for the safety and/or property of others is the primary motivating factor, e.g., Might cut myself; Makes the streets look neat. | **No reason:** |
| | Scores | | | |
| **Effective removal:** Safe disposal of glass, e.g., Sweep it up; Put it in the garbage; etc. | 5 | 4 | 3 | 3 |
| **Ineffective removal:** Lessens the potential danger of the glass, but does not dispose of it completely; or employs inefficient or unrealistic method of disposal, e.g., Kick it off; Kick it on the side; Dig a hole and bury it. | 4 | 3 | 3 | 3 |
| **Inadequate removal:** Attempt to remove object, but action does not decrease potential danger of glass, e.g, Kick it in the street; Throw it in the alley. | 2 | 2 | 2 | 2 |
| **No attempt at removal:** | 0 | 0 | 0 | 0 |

Dont know, failure to respond, and uncertain response indicating that the subject did not comprehend the issue are scored one.

## Table 3

### Prorated Scoring for Omitted Items on ECT

**Scoring of Omitted 5-Point Items**

| Prorated Score | Raw Score on Items Answered,Minus Score on Item 7. (One 5 pt. Item Omitted.) | Raw Score on Items Answered, Minus Score on Item 7. (Two 5 pt. Items Omitted.) | Raw Score on Items Answered, Minus Score on Item 7. (One 5 pt. and One 3 pt. Item Omitted.) |
|---|---|---|---|
| 0 | 0-5 | 0-5 | 0-5 |
| 1 | 6-16 | 6-15 | 6-15 |
| 2 | 17-28 | 16-25 | 16-26 |
| 3 | 29-39 | 26-35 | 27-37 |
| 4 | 40-50 | 36-45 | 38-47 |
| 5 | 51-56 | 46-51 | 48-53 |

**Scoring of Omitted 3-Point Items**

| Prorated Score | Raw Score on Items Answered, Minus Score on Item 7.(One 3 pt. Item Omitted.) | Raw Score on Items Answered, Minus Score on Item 7. (Two 3 pt. Items Omitted.) | Raw Score on Items Answered, Minus Score on Item 7. (One 5 pt. and One 3 pt. Item Omitted.) |
|---|---|---|---|
| 0 | 0-9 | 0-9 | 0-8 |
| 1 | 10-27 | 10-27 | 9-26 |
| 2 | 28-48 | 28-44 | 27-44 |
| 3 | 49-58 | 45-55 | 45-53 |

**Scoring of Omitted 2-Point Item (Item 7)**

If Item 7 has been omitted, assign score of 2.

## Table 4.

### Description of Sample Used in Validity and Reliability Studies of the Chicago Test of General Information and General Comprehension

| | | | | |
|---|---|---|---|---|
| CA: | Mean 12.356 years | | Standard Deviation 1.801 | |
| MA: | Mean 8.324 years | | Standard Deviation 1.207 | |
| IQ: | Mdn 69.63 | | Q1-65.5 Q3-72.27 Q-3.385 | |
| Sex Distribution: Total N=556 | | Males: 308 (55.3%) | Females: 248 (44.6%) | |
| Socio-Economic Community Ratings: | I -II | III | IV | V+ |
| Ranges from I-II (lowest), IV (average), X (highest) | 362 (65.1%) | 124 (22.3%) | 49(8.8%) | 20 (3.6%) |

### Table 5

### Product - Moment Correlations Between Stanford-Binet MA, Extrapolated from Most Recent Examinations, and GICT Scales

| GICT Scale | N | r with MA | Mean | s |
|---|---|---|---|---|
| GICT Total Score (total sample) | 556 | .79 | 54.904 | 17.712 |
| GICT Total Score minus ECT Unit Score (Total sample) | 556 | .81 | 44.032 | 16.607 |
| GICT Total Score Ages 8-9 | 66 | .38 | 32.909 | 11.576 |
| GICT Total Score minus ECT Ages 8-9 | 66 | .40 | 23.590 | 9.814 |
| GICT Total Score Ages 10-11 | 160 | .62 | 44.375 | 13.60 |
| GICT Total Score minus ECT Ages 10-11 | 160 | .64 | 33.625 | 12.469 |
| GICT Total Score Ages 12-13 | 197 | .54 | 60.527 | 12.819 |
| GICT Total Score minus ECT Ages 12-13 | 197 | .56 | 49.309 | 12.03 |
| GICT Total Score Ages 14-15 | 133 | .54 | 70.157 | 11.23 |
| GICT Total Score minus ECT Ages 14-15 | 133 | .56 | 58.879 | 10.215 |
| ECT Total Score (1957-58 data) | 554 | .56 | 40.550 | 6.290 |

## Table 6

### Derivation of Ethical Comprehension Test Unit Score as Based on Distribution of ECT Scores from Retest Year Data

N = 557

| | Score | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | 0 | 1 | 2 | 3 | 4 | 5 | Omissions | Unit Score (Modal Correct Score) | R | W | % R | % W |
| 1 | 6 | 21 | 97 | 433 | - | - | | 3 | 433 | 124 | 77.7 | 22.3 |
| 2 | 16 | 12 | 53 | 476 | - | - | | 3 | 476 | 81 | 85.5 | 14.5 |
| 3 | 4 | 8 | 72 | 177 | 291 | 5 | | 4 | 296 | 261 | 53.1 | 46.9 |
| 4 | 14 | 4 | 39 | 64 | 419 | 17 | | 4 | 436 | 121 | 78.3 | 21.7 |
| 5 | 19 | 9 | 6 | 65 | 107 | 351 | | 5 | 351 | 206 | 63.0 | 37.0 |
| 6 | 64 | 17 | 127 | 246 | 71 | 31 | 1 | 3 | 348 | 208 | 62.6 | 37.4 |
| 7 | 28 | 13 | 516 | - | - | - | | 2 | 516 | 41 | 92.6 | 7.4 |
| 8 | 44 | 48 | 10 | 259 | 181 | 15 | | 3 | 455 | 102 | 81.7 | 18.3 |
| 9 | 34 | 27 | 157 | 286 | 44 | 9 | | 3 | 339 | 218 | 60.9 | 39.1 |
| 10 | 14 | 9 | 35 | 264 | 228 | 4 | 3 | 3 | 496 | 58 | 89.5 | 10.5 |
| 11 | 6 | 4 | 45 | 401 | 100 | 1 | | 3 | 502 | 55 | 90.1 | 9.9 |
| 12 | 24 | 11 | 45 | 264 | 176 | 37 | | 3 | 477 | 80 | 85.6 | 14.4 |
| 13 | 5 | 4 | 67 | 350 | 124 | 7 | | 3 | 481 | 76 | 86.4 | 13.6 |
| 14 | 8 | 5 | 139 | 359 | 46 | 0 | | 3 | 405 | 152 | 72.7 | 27.3 |
| Totals | 286 | 192 | 1408 | 3644 | 1787 | 477 | 4 | | | | | |

Modal correct score for each item was designated the Unit Score. Correct scores were defined as minimum scores of three on six--and four-point scales and minimum scores of two on three-point scales.

Table 7

Inter-Test Correlations of GICT

N=556

| | H, PE, S<br>1 | Sci.<br>2 | ECT Unit Score<br>3 | SS<br>4 | Arith.<br>5 |
|---|---|---|---|---|---|
| 1. H, PE, & Safety | | | | | |
| 2. Science | .72 | | | | |
| 3. ECT Unit Score | .49 | .52 | | | |
| 4. Social Studies | .68 | .77 | .44 | | |
| 5. Arithmetic | .63 | .74 | .41 | .79 | |

Table 8.

Correlation of GICT Subtests with GICT Total Score, With or Without ECT Unit Score, With Effect of Spurious Influence of Subtest Component of Total Score Removed (N=556)

| Subtest | r with GICT minus ECT | r with Total GICT |
|---|---|---|
| Health, Phy. Ed. and Safety | .72 | .74 |
| Science | .82 | .84 |
| Ethical Comprehension Unit Score | .51 | |
| Ethical Comprehension Total Score | .59 | |
| Social Studies | .83 | .83 |
| Arithmetic | .80 | .80 |

### Table 9

### Kuder-Richardson Form 20 Reliability Coefficients of GICT and its Subtests

N=556

| Test | K-R Reliability Coefficient | M | s |
|---|---|---|---|
| Health , PE, and Safety | .74 | 13.919 | 3.615 |
| Science | .75 | 9.338 | 3.683 |
| ECT Unit Score | .53 | 10.798 | 2.181 |
| Social Studies | .86 | 10.525 | 6.057 |
| Arithmetic | .84 | 10.206 | 5.069 |
| Total minus ECT | .94 | 44.032 | 16.607 |
| Total GICT Test | .94 | 54.904 | 17.712 |

Table 10

Description of Sample Used in Validity and Reliability Studies of the Cooperative Research Project Ethical Comprehension Test

| | | | | |
|---|---|---|---|---|
| CA: | Mean 11.346 | | Standard Deviation: | 1.804 |
| MA: | Mean 7.713 | | Standard Deviation | 1.251 |
| IQ: | Mdn. 69.78 | Q1=65.55 | Q3=72.28 | Q=3.365 |
| Sex Distribution: | Total N=667 | Males: 373 (55.9%) | Females: 294 (44.1%) | |
| Socio-Economic Community Ratings: | I-II | III | IV | V+ |
| (Ranges from I-II (lowest), IV (average), X (highest) | 454 (68.1%) | 145 (21.7%) | 48 (7.2%) | 20 (3.0%) |

## Table 11

## Means and Standard Deviations of ECT Scores for Reliability and Validity Samples

| Sample | N | M | s |
|---|---|---|---|
| First Test Data | | | |
| Behavior Checklist Sample | 636 | 40.283 | 6.625 |
| TAT-MPT Validity Sample | 192 | 40.583 | 6.586 |
| Split-Half Reliability Sample | 100 | 40.77 | 6.372 |
| Parallel Half 1 | 100 | 21.12 | 3.334 |
| Parallel Half 2 | 100 | 19.65 | 3.707 |
| Test Re-Test Reliability Sample | | | |
| First Test Data | 553 | 40.528 | 6.275 |
| Retest Year Data | 553 | 42.182 | 5.379 |

### Table 12

### Means and Standard Deviations of ECT Scores

### by CA and MA Yearly Intervals

| CA | | | | MA | | | |
|---|---|---|---|---|---|---|---|
| CA | N | M | s | MA | N | M | s |
| 7-0 to 7-11 | 10 | 31.40 | 5.502 | 5-0 to 5-11 | 47 | 31.904 | 7.285 |
| 8-0 to 8-11 | 70 | 34.043 | 8.432 | 6-0 to 6-11 | 170 | 36.876 | 6.794 |
| 9-0 to 9-11 | 93 | 36.801 | 6.152 | 7-0 to 7-11 | 155 | 40.642 | 5.060 |
| 10-0 to 10-11 | 100 | 38.880 | 5.801 | 8-0 to 8-11 | 172 | 42.884 | 4.448 |
| 11-0 to 11-11 | 120 | 41.750 | 5.260 | 9-0 to 9-11 | 109 | 44.115 | 3.902 |
| 12-0 to 12-11 | 117 | 42.807 | 4.139 | 10-0 to 10-11 | 13 | 44.769 | 3.370 |
| 13-0 to 13-11 | 112 | 43.304 | 4.523 | | | | |
| 14-0 to 14-11 | 45 | 44.144 | 4.244 | | | | |

Table 13

Correlations Between ECT and Other Measures

| Factor: | Hypothesized Correlations | N | Obtained Correlations |
|---|---|---|---|
| Teacher Rating Instruments | | | |
| Adjustment Rating Scale | low + r | 650 | $r_t$ + .11 |
| Responsibility Score from Behavior Checklist | moderate + r | 636 | $r_t$ + .18 |
| Motivation Score from Behavior Checklist | moderate + r | 636 | $r_t$ + .17 |
| Well Adjusted Score from Behavior Checklist | moderate + r | 636 | $r_t$ + .20 |
| Aggressive Score from Behavior Checklist | moderate - r | 636 | $r_t$ - .14 |
| Passive Score from Behavior Checklist | low - r | 636 | $r_t$ - .20 |
| Examiner Ratings and Categorizations | | | |
| Motivation Rating | low or mod.+r | 620 | $r_t$ + .36 |
| Adjustment Categorization | low or mod.+r | 634 | $r_t$ + .30 |

## Table 14

## Relationships Between ECT and TAT-MPT Scales

| TAT-MPT Scales: | Hypothesized Relationships | Obtained $X^2$ | |
|---|---|---|---|
| | | $X^2$ | P |
| Scales Derived from Analysis of Interrelationships | | | |
| Attitude Toward Authority Pos. | moderate +r | 0.000 | 1.000 |
| Attitude Toward Authority Neg. | moderate -r | 0.050 | .823 |
| Superego Scale | moderate +r | 0.188 | .655 |
| Scales Derived from Analysis of Structure and Content | | | |
| Hostility | low - | 2.782 | .094 |
| Superego | moderate + | 2.782 | .094 |
| Values System Pos. | low + | 3.832 | .050 |
| Values System Neg. | low - | .421 | .520 |

## Table 15

### Disconfirmation of Hypothesis that Relationships Between ECT and BCL Scales are due to Common Factor of MA

N=641

| BCL Factor: | Obtained R+ with MA |
|---|---|
| Well Adjusted Scale | + .12 |
| Passive Scale | - .13 |
| Aggressive Scale | - .07 |
| Responsibility Scale | + .17 |
| Motivation Scale | + .20 |

## Table 16

### Table of Standard Scores on GICT for Combinations of CA and IQ Intervals to be Used in Making Tentative Interpretations of Raw Scores

(Based on transformation to Standard Score System with mean of 50 and SD of 10)

| | IQ's 65-69 | | | | | | IQ's 70-74 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CA | | | | | | CA | | | | | | |
| Raw Score | 8 | 9 | 10 | 11 | 12 | 13 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 0 | 37 | 27 | 18 | 7 | | | 25 | 20 | 10 | 1 | | | |
| 1 | 38 | 28 | 19 | 8 | | | 26 | 22 | 11 | 2 | | | |
| 2 | 38 | 29 | 20 | 9 | 1 | | 28 | 23 | 12 | 3 | | | |
| 3 | 39 | 30 | 21 | 10 | 2 | 0 | 29 | 24 | 14 | 4 | | | |
| 4 | 40 | 31 | 23 | 11 | 3 | 1 | 31 | 26 | 15 | 6 | | | |
| 5 | 41 | 32 | 24 | 13 | 4 | 2 | 32 | 27 | 16 | 7 | | | |
| 6 | 42 | 33 | 25 | 14 | 5 | 4 | 33 | 28 | 17 | 8 | 0 | | |
| 7 | 43 | 35 | 26 | 15 | 6 | 5 | 35 | 30 | 18 | 9 | 2 | | |
| 8 | 44 | 36 | 28 | 16 | 7 | 6 | 36 | 31 | 19 | 11 | 3 | | |
| 9 | 45 | 37 | 29 | 17 | 8 | 7 | 37 | 32 | 21 | 12 | 4 | | |
| 10 | 46 | 38 | 30 | 18 | 10 | 8 | 39 | 34 | 22 | 13 | 5 | | |
| 11 | 47 | 39 | 31 | 19 | 11 | 9 | 40 | 35 | 23 | 14 | 6 | | |
| 12 | 48 | 40 | 32 | 21 | 12 | 10 | 42 | 36 | 24 | 16 | 7 | | |
| 13 | 48 | 41 | 34 | 22 | 13 | 11 | 43 | 38 | 25 | 17 | 9 | 0 | |
| 14 | 49 | 42 | 35 | 23 | 14 | 12 | 44 | 39 | 26 | 18 | 10 | 1 | |
| 15 | 50 | 43 | 36 | 24 | 15 | 13 | 46 | 40 | 28 | 19 | 11 | 2 | |
| 16 | 51 | 44 | 37 | 25 | 16 | 14 | 47 | 42 | 29 | 20 | 12 | 3 | |
| 17 | 52 | 45 | 38 | 26 | 17 | 15 | 48 | 43 | 30 | 22 | 13 | 4 | |
| 18 | 53 | 46 | 40 | 27 | 19 | 16 | 50 | 44 | 31 | 23 | 14 | 6 | 0 |
| 19 | 54 | 47 | 41 | 28 | 20 | 18 | 51 | 46 | 32 | 24 | 16 | 7 | 2 |
| 20 | 55 | 48 | 42 | 30 | 21 | 19 | 53 | 47 | 33 | 25 | 17 | 8 | 3 |

Table 16 (Cont.)

| | IQ's 65-69 | | | | | | IQ's 70-74 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CA | | | | | | CA | | | | | | |
| Raw Score | 8 | 9 | 10 | 11 | 12 | 13 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 21 | 56 | 49 | 43 | 31 | 22 | 20 | 54 | 49 | 35 | 27 | 18 | 9 | 4 |
| 22 | 57 | 51 | 44 | 32 | 23 | 21 | 55 | 50 | 36 | 28 | 19 | 10 | 5 |
| 23 | 57 | 52 | 46 | 33 | 24 | 22 | 57 | 51 | 37 | 29 | 20 | 11 | 6 |
| 24 | 58 | 53 | 47 | 34 | 25 | 23 | 58 | 53 | 38 | 30 | 21 | 13 | 7 |
| 25 | 59 | 54 | 48 | 35 | 27 | 24 | 59 | 54 | 39 | 32 | 23 | 14 | 9 |
| 26 | 60 | 55 | 49 | 36 | 28 | 25 | 61 | 55 | 40 | 33 | 24 | 15 | 10 |
| 27 | 61 | 56 | 50 | 38 | 29 | 26 | 62 | 57 | 42 | 34 | 25 | 16 | 11 |
| 28 | 62 | 57 | 52 | 39 | 30 | 27 | 63 | 58 | 43 | 35 | 26 | 17 | 12 |
| 29 | 63 | 58 | 53 | 40 | 31 | 28 | 65 | 59 | 44 | 37 | 27 | 18 | 13 |
| 30 | 64 | 59 | 54 | 41 | 32 | 29 | 66 | 61 | 45 | 38 | 28 | 20 | 14 |
| 31 | 65 | 60 | 55 | 42 | 33 | 31 | 68 | 62 | 46 | 39 | 30 | 21 | 16 |
| 32 | 66 | 61 | 56 | 43 | 34 | 32 | 69 | 63 | 47 | 40 | 31 | 22 | 17 |
| 33 | 67 | 62 | 58 | 44 | 36 | 33 | 70 | 65 | 49 | 41 | 32 | 23 | 18 |
| 34 | 67 | 63 | 59 | 45 | 37 | 34 | 72 | 66 | 50 | 43 | 33 | 24 | 19 |
| 35 | 68 | 64 | 60 | 47 | 38 | 35 | 73 | 67 | 51 | 44 | 34 | 25 | 20 |
| 36 | 69 | 66 | 61 | 48 | 39 | 36 | 74 | 69 | 52 | 45 | 35 | 27 | 21 |
| 37 | 70 | 67 | 63 | 49 | 40 | 37 | 76 | 70 | 53 | 46 | 36 | 28 | 23 |
| 38 | 71 | 68 | 64 | 50 | 41 | 38 | 77 | 71 | 54 | 48 | 38 | 29 | 24 |
| 39 | 72 | 69 | 65 | 51 | 42 | 39 | 79 | 73 | 56 | 49 | 39 | 30 | 25 |
| 40 | 73 | 70 | 66 | 52 | 43 | 40 | 80 | 74 | 57 | 50 | 40 | 31 | 26 |
| 41 | 74 | 71 | 67 | 53 | 45 | 41 | 81 | 75 | 58 | 51 | 41 | 32 | 27 |
| 42 | 75 | 72 | 69 | 55 | 46 | 42 | 83 | 77 | 59 | 53 | 42 | 34 | 28 |
| 43 | 76 | 73 | 70 | 56 | 47 | 43 | 84 | 78 | 60 | 54 | 43 | 35 | 30 |
| 44 | 76 | 74 | 71 | 57 | 48 | 45 | 85 | 79 | 61 | 55 | 45 | 36 | 31 |
| 45 | 77 | 75 | 72 | 58 | 49 | 46 | 87 | 81 | 63 | 56 | 46 | 37 | 32 |

Table 16 (Cont.)

| | IQ's 65-69 | | | | | | IQ's 70-74 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CA | | | | | | CA | | | | | | |
| Raw Score | 8 | 9 | 10 | 11 | 12 | 13 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 46 | 78 | 76 | 73 | 59 | 50 | 47 | 88 | 82 | 64 | 58 | 47 | 38 | 33 |
| 47 | 79 | 77 | 75 | 60 | 51 | 48 | 89 | 84 | 65 | 59 | 48 | 39 | 34 |
| 48 | 80 | 78 | 76 | 61 | 52 | 49 | 91 | 85 | 66 | 60 | 49 | 41 | 35 |
| 49 | 81 | 79 | 77 | 62 | 54 | 50 | 92 | 86 | 67 | 61 | 50 | 42 | 37 |
| 50 | 82 | 80 | 78 | 64 | 55 | 51 | 94 | 88 | 68 | 62 | 52 | 43 | 38 |
| 51 | 83 | 82 | 79 | 65 | 56 | 52 | 95 | 89 | 70 | 64 | 53 | 44 | 39 |
| 52 | 84 | 83 | 81 | 66 | 57 | 53 | 96 | 90 | 71 | 65 | 54 | 45 | 40 |
| 53 | 85 | 84 | 82 | 67 | 58 | 54 | 98 | 92 | 72 | 66 | 55 | 46 | 41 |
| 54 | 86 | 85 | 83 | 68 | 59 | 55 | 99 | 93 | 73 | 67 | 56 | 48 | 42 |
| 55 | 86 | 86 | 84 | 69 | 60 | 56 | 100 | 94 | 74 | 69 | 57 | 49 | 44 |
| 56 | 87 | 87 | 85 | 70 | 62 | 58 | | 96 | 75 | 70 | 59 | 50 | 45 |
| 57 | 88 | 88 | 87 | 72 | 63 | 59 | | 97 | 77 | 71 | 60 | 51 | 46 |
| 58 | 89 | 89 | 88 | 73 | 64 | 60 | | 98 | 78 | 72 | 61 | 52 | 47 |
| 59 | 90 | 90 | 89 | 74 | 65 | 61 | | 100 | 79 | 74 | 62 | 53 | 48 |
| 60 | 91 | 91 | 90 | 75 | 66 | 62 | | | 80 | 75 | 63 | 55 | 49 |
| 61 | 92 | 92 | 91 | 76 | 67 | 63 | | | 81 | 76 | 64 | 56 | 51 |
| 62 | 93 | 93 | 93 | 77 | 68 | 64 | | | 82 | 77 | 65 | 57 | 52 |
| 63 | 94 | 94 | 94 | 78 | 69 | 65 | | | 84 | 79 | 67 | 58 | 53 |
| 64 | 95 | 95 | 95 | 79 | 71 | 66 | | | 85 | 80 | 68 | 59 | 54 |
| 65 | 95 | 96 | 96 | 81 | 72 | 67 | | | 86 | 81 | 69 | 60 | 55 |
| 66 | 96 | 98 | 97 | 82 | 73 | 68 | | | 87 | 82 | 70 | 62 | 57 |
| 67 | 97 | 99 | 99 | 83 | 74 | 69 | | | 88 | 84 | 71 | 63 | 58 |
| 68 | 98 | 100 | 100 | 84 | 75 | 70 | | | 89 | 85 | 72 | 64 | 59 |
| 69 | 99 | | | 85 | 76 | 72 | | | 91 | 86 | 74 | 65 | 60 |
| 70 | 100 | | | 86 | 77 | 73 | | | 92 | 87 | 75 | 66 | 61 |

Table 16 (Cont.)

| | IQ's 65-69 | | | | | | IQ's 70-74 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CA | | | | | | CA | | | | | | |
| Raw Score | 8 | 9 | 10 | 11 | 12 | 13 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 71 | | | | 87 | 78 | 74 | | | 93 | 88 | 76 | 67 | 62 |
| 72 | | | | 89 | 80 | 75 | | | 94 | 90 | 77 | 69 | 64 |
| 73 | | | | 90 | 81 | 76 | | | 95 | 91 | 78 | 70 | 65 |
| 74 | | | | 91 | 82 | 77 | | | 96 | 92 | 79 | 71 | 66 |
| 75 | | | | 92 | 83 | 78 | | | 98 | 93 | 81 | 72 | 67 |
| 76 | | | | 93 | 84 | 79 | | | 99 | 95 | 82 | 73 | 68 |
| 77 | | | | 94 | 85 | 80 | | | 100 | 96 | 83 | 74 | 69 |
| 78 | | | | 95 | 86 | 81 | | | | 97 | 84 | 76 | 71 |
| 79 | | | | 96 | 87 | 82 | | | | 98 | 85 | 77 | 72 |
| 80 | | | | 98 | 89 | 83 | | | | 100 | 86 | 78 | 73 |
| 81 | | | | 99 | 90 | 85 | | | | | 88 | 79 | 74 |
| 82 | | | | 100 | 91 | 86 | | | | | 89 | 80 | 75 |
| 83 | | | | | 92 | 87 | | | | | 90 | 81 | 76 |
| 84 | | | | | 93 | 88 | | | | | 91 | 83 | 78 |
| N | 20 | 30 | 32 | 20 | 32 | 38 | 36 | 53 | 47 | 62 | 54 | 44 | 23 |
| M | 14.75 | 21.47 | 26.63 | 38.0 | 45.81 | 49.05 | 18.17 | 22.09 | 34.19 | 39.89 | 48.67 | 56.07 | 60.43 |
| S | 11.05 | 9.37 | 8.29 | 8.83 | 8.86 | 9.26 | 7.30 | 7.43 | 8.58 | 8.09 | 8.62 | 8.58 | 8.55 |

## Table 17

### Table of Standard Scores on ECT for Combinations of CA and IQ Intervals to be Used in Making Tentative Interpretations of Raw Scores

(Based on transformation to Standard Score System with mean of 50 and SD of 10)

| | IQ's 65-69 | | | | | | IQ's 70-74 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CA | | | | | | CA | | | | | | |
| Total Raw Score | 8 | 9 | 10 | 11 | 12 | 13 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 14 | | | | | | | 28 | | | | | | |
| 15 | | | | | | | 31 | | | | | | |
| 16 | 30 | | | | | | 33 | | | | | | |
| 17 | 34 | | | | | | 33 | | | | | | |
| 18 | 36 | 29 | | | | | 34 | | | | | | |
| 19 | 38 | 32 | | | | | 35 | | | | | | |
| 20 | 40 | 34 | | | | | 35 | | | | | | |
| 21 | 40 | 35 | | | | | 35 | | | | | | |
| 22 | 40 | 36 | | | | | 36 | | | | | | |
| 23 | 40 | 37 | | | | | 37 | | | | | | |
| 24 | 41 | 37 | | | | | 38 | 27 | | | | | |
| 25 | 42 | 37 | | | | | 39 | 29 | | | | | |
| 26 | 45 | 37 | | | | | 40 | 29 | | | | | |
| 27 | 46 | 37 | | 30 | | | 40 | 29 | 30 | | | | |
| 28 | 47 | 37 | | 36 | | 28 | 41 | 31 | 33 | | | | |
| 29 | 47 | 40 | | 37 | | 31 | 42 | 32 | 33 | | | | |
| 30 | 48 | 42 | 28 | 37 | | 32 | 43 | 33 | 34 | | | | |
| 31 | 49 | 42 | 34 | 37 | | 34 | 44 | 36 | 35 | 26 | | | |
| 32 | 49 | 42 | 37 | 37 | | 34 | 44 | 39 | 36 | 28 | | | |
| 33 | 51 | 44 | 38 | 37 | 31 | 34 | 45 | 40 | 37 | 30 | 26 | | |
| 34 | 53 | 45 | 38 | 37 | 35 | 34 | 46 | 42 | 37 | 31 | 32 | | |
| 35 | 55 | 47 | 38 | 38 | 35 | 35 | 46 | 43 | 38 | 31 | 34 | | |

Table17 (Cont.)

| Total Raw Score | IQ's 65-69 |  |  |  |  |  | IQ's 70-74 |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | CA |  |  |  |  |  | CA |  |  |  |  |  |  |
|  | 8 | 9 | 10 | 11 | 12 | 13 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 36 | 56 | 50 | 40 | 40 | 35 | 36 | 47 | 45 | 39 | 34 | 36 |  |  |
| 37 | 57 | 52 | 44 | 40 | 36 | 36 | 49 | 47 | 42 | 36 | 38 |  |  |
| 38 | 60 | 52 | 48 | 41 | 38 | 37 | 50 | 50 | 45 | 38 | 39 |  |  |
| 39 | 60 | 53 | 49 | 43 | 39 | 38 | 52 | 52 | 47 | 40 | 40 | 27 | 30 |
| 40 | 64 | 57 | 50 | 45 | 42 | 40 | 54 | 54 | 49 | 41 | 41 | 36 | 33 |
| 41 |  | 59 | 50 | 46 | 45 | 44 | 56 | 55 | 52 | 43 | 43 | 42 | 35 |
| 42 |  | 61 | 52 | 48 | 48 | 47 | 58 | 57 | 56 | 46 | 46 | 45 | 39 |
| 43 |  | 64 | 53 | 50 | 50 | 49 | 60 | 59 | 58 | 48 | 48 | 47 | 44 |
| 44 |  | 65 | 55 | 50 | 50 | 51 | 62 | 63 | 62 | 51 | 51 | 48 | 47 |
| 45 |  | 68 | 58 | 54 | 52 | 53 | 65 | 67 | 63 | 54 | 54 | 51 | 50 |
| 46 |  |  | 62 | 56 | 54 | 56 | 68 | 68 | 65 | 58 | 57 | 54 | 53 |
| 47 |  |  | 64 | 59 | 57 | 59 | 70 | 69 | 70 | 62 | 61 | 57 | 55 |
| 48 |  |  | 65 | 62 | 61 | 62 | 70 | 71 |  | 66 | 65 | 61 | 56 |
| 49 |  |  | 67 | 64 | 64 | 63 | 73 | 71 |  | 70 | 69 | 64 | 58 |
| 50 |  |  | 72 | 70 | 67 | 65 |  | 71 |  | 72 |  | 70 | 63 |
| 51 |  |  |  |  | 72 | 69 |  | 71 |  | 74 |  |  | 67 |
| 52 |  |  |  |  |  |  |  | 73 |  |  |  |  | 70 |
| N | 20 | 30 | 33 | 20 | 32 | 38 | 44 | 53 | 48 | 66 | 58 | 46 | 24 |
| M | 30.45 | 35.43 | 40.27 | 41.85 | 43.31 | 43.13 | 35.59 | 38.09 | 39.60 | 42.95 | 43.02 | 44.39 | 45.42 |
| s | 7.44 | 6.81 | 5.24 | 6.24 | 4.57 | 4.93 | 8.43 | 5.10 | 4.54 | 3.86 | 3.98 | 3.14 | 3.37 |

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IV.

# PERSONALITY APPRAISAL OF EDUCABLE MENTALLY HANDICAPPED CHILDREN

## A SYSTEM OF SCORING AND INTERPRETING PICTURE STORY TESTS

Cooperative Research Project SAE 6529

BOARD OF EDUCATION
CITY OF CHICAGO
1961

# PERSONALITY APPRAISAL OF EDUCABLE MENTALLY HANDICAPPED CHILDREN:
## A SYSTEM FOR SCORING AND INTERPRETING PICTURE STORY TESTS

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This publication was based on research performed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare.

Board of Education
of the
City of Chicago
Chicago, Illinois
1961

# PERSONALITY APPRAISAL OF EDUCABLE MENTALLY HANDICAPPED CHILDREN: A SYSTEM FOR SCORING AND INTERPRETING PICTURE STORY TESTS

Part IV. of a six-part report on a series of researches on

## HOW MENTALLY HANDICAPPED CHILDREN LEARN UNDER CLASSROOM CONDITIONS

carried on under the terms of Cooperative Research Project No. SAE 6529, dated February 28, 1957, between the United States of America acting through the United States Commissioner of Education of the Office of Education, Department of Health, Education, and Welfare, and the Department of Public Instruction of the State of Illinois, to provide research through the facilities of the Board of Education of the City of Chicago.

Part

I. Achievement and Adjustment of Educable Mentally Handicapped Children in Special Classes and in Regular Grades

II. Teaching the Educable Mentally Handicapped Child: A Comparison of Four Methods of Instruction

III. The Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children: Manual and Report

IV. Personality Appraisal of Educable Mentally Handicapped Children: A System for Scoring and Interpreting Picture Story Tests

V. The Chicago Cooperative Research Project Practical Reading Test "Every Day Reading for Fun and Meaning:" Directions for Administration and Scoring. Second Edition.

VI. Brief Screening Instruments for Evaluating the Academic Skills and Personal Adjustment of Educable Mentally Handicapped Children.

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# Personality Appraisal of Educable Mentally Handicapped Children; A System for Scoring and Interpreting Picture Story Tests

Adele M. Morel and Marjorie P. Simons

Cooperative Research Project, Chicago Board of Education

## 1. A System for Scoring and Interpreting Picture Story Tests

The selection of a method for appraising personality status and change in educable mentally handicapped children (E.M.H.) in an experimental study of the relative effectiveness of different types of school placement is a difficult task both from the standpoint of test administration and the standpoint of test interpretation. After a survey of possible procedures it was decided that a picture-story projective test best met those problems of personality test administration unique to E.M.H. children. This choice was dictated by several considerations: children of the entire age range (CA 7-0 to 17-0 with MA's from 5-0 to 11-0) could respond to the same test; the test is independent of reading skills; the identical test can be re-administered within a year. That a test of this type could differentiate both between groups and between individuals, and detect change over one- and two-year intervals was less clear and obviously dependent in large part upon the method of interpretation.

The problems of test interpretation were not easily resolved. Research studies using picture-story tests have commonly used either subjective methods of interpretation or objective methods of such circumscribed scope that they are unsuited for the meager productions of many E.M.H. children. The over-all problem consisted of devising a method broad enough to cover both meager and relatively rich picture-story productions, and of extracting test variables and converting them into measures both psychologically meaningful and statistically practical. Basic to the system which evolved is the governing hypothesis that the most productive and constructive use of projective tests requires the collaboration of subjective and objective approaches. The first goal, then, is a systematically collected and objectively analyzed body of data with reference to which the individual protocol can be evaluated and against which the unique qualities of the protocol will be highlighted. These preliminary procedures are viewed as services to the individual clinician whose intuitive skills can best be exercised in relationship to normative data.

The over-all system is thus seen in three steps:(1) the schematization of the protocol, (2) the conversion to scale scores, and (3) the clinical evaluation of the protocol involving an interpretation of the inter-relationship of scale scores, the functioning of controlling and repressive forces, and of unique personality variables. This third and most important step in the interpretative process is viewed as a clinical process toward which the first two steps of the experiment make vital contributions. It remains, however, essentially a subjective clinical process. Steps toward making the final process more objective must be hypothesized and explored. At this level,the complexity of personality evaluation and the limited number of cases in any group makes statistical evaluation of somewhat dubious value, however.

## 2. Experimental Procedure

### The Experimental Group

Children involved in the Picture-Story Test Experiment were drawn from the larger sample of 667 cases in the Cooperative Research Project Matched-Pair Experiment reported by Mullen and Itkin (1961). The chronological ages of the group ranged from 7 through 14 with the mean at 11.35; mental ages varied from 4-10 to 10-5 with the mean at 7.71; and IQ's varied from 50 through 74 with a median of 69.78. The sex distribution was approximately 56 per cent male and 44 per cent female . The sample was predominantly a sample of low socio-ecchomic status, approximately 89 per cent of the sample residing in areas of lower than average socio-economic status for the city as a whole. From this group, two random samples of 100 each were drawn for preliminary analysis. Later two groups were selected: One consisted of 52 children nominated as well-adjusted by project examiners and the other of 91 children nominated as poorly-adjusted. These groups, which somewhat overlapped the random samples, were used in the preliminary analysis of data. For final statistical procedures, the group was increased to 455 by inclusion of children from the sample of 140 matched pairs who were not in either the random samples or in the nomination groups. The experimental group consequently is not presumed to be a representative sample of educable mentally handicapped children. A description of group from which sample was drawn is given in Table 1.

### The Stimulus

Since the problem of personality evaluation of E.M.H. children was part of a major experiment involving the relative effectiveness of different types of school placement, the pictures to which the child was asked to respond were those that depicted child-school and child-authority situations as well as less structured situations designed to reveal more basic aspects of personality. The final set included five cards from the Thematic Apperception Test (TAT), five from the Michigan Picture Test (MPT), and two that appear in both series. This set of twelve included two pairs of separate cards for boys and girls; thus, each child responded to a total of ten cards. This particular choice was subjective and expedient; it is not claimed that it represents the most effective selection of pictures, since this has not been experimentally tested. Cards administered were as follows:

| Boys | | Girls | |
|---|---|---|---|
| TAT 1 | MPT 3 | TAT 1 | MPT 3 |
| TAT 2 | MPT 4 B | TAT 2 | MPT 4 BG |
| TAT 3 BM | MPT 7 | TAT 3BM | MPT 7 |
| TAT 4 | MPT 11G | TAT 4 | MPT 11G(Same as TAT 6GF) |
| TAT 6 BM | Blank (TAT 16-MPT 12) | TAT 6BM | Blank (TAT 16-MPT 12) |

The cards TAT 3BM and TAT 6 BM,designed by Murray to be administered to boys and men,have been given to both boys and girls. The alternative cards in the female series do not represent comparable situations for the school age child. Both boys and girls in the group were able to make appropriate identification with the figures in the series and to produce adequate stories to these stimuli.

Method of Administration

The method of administration varied somewhat from the usual procedure. Examiners were not permitted the flexibility of asking leading questions in areas of clinical interest suggested by the response, but were required to ask specific, direct questions to elicit answers concerning areas not covered by the child's original response. Instructions to examiners followed the general form suggested for the Michigan Picture Test. Directions for administration are given in Appendix A.

### 3. The Schematic Device

It was hypothesized that a protocol could be abstracted and schematized in such a way as to preserve its essence,while converting it into variables which could be manipulated for research purposes, variables which despite an atomistic appearance could contribute to a system capable of describing the funcctioning personality in dynamic, holistic terms.

In developing this scoring device,major effort was directed toward schematizing the protocol, not toward fitting the protocol into an interpretive frame. It was hypothesized that such schematization, if adequately accomplished, should lead to a clustering of items representing facets of personality, the functioning personality being the result of the checks and balances of these interacting facets. Based on these hypotheses,the initial scoring step in this system is non-interpretive; it is based on the child's verbal expression, the story he presents to public view, not the story he represses or expresses covertly. It will be the burden of the later analytic steps to evaluate the function of the controlling and repressive forces in personality.

The schematic scoring device grew from the protocols of the group. Preliminary appraisal of a large number of protocols obtained from the E.M.H. group under the particular set of directions of the experiment suggested that an adequate scoring system should cover the general areas of structure, content, feelings, goals, adjustive behavior and personal interrelationships. The first five areas have been combined and handled under one format. The area of personal interrelationships,requiring a different format,and yielding a somewhat different type of information, is considered separately and is not being reported here.

The widespread occurrence of certain characteristics in the protocols of the E.M.H. group forced several basic decisions which differentiate the approach from methods frequently employed in research with picture story tests.

Since the characteristics which dictated these decisions are not exclusive to this group, however, it is felt that the method presented here may clarify some inconsistencies in experimental results which have appeared in psychological literature.

The use of word counts was contraindicated because of the meaningless repetition evidenced in many protocols. The essential characteristics of the protocols were better explained by scoring the ideas expressed plus the general protocol idiosyncrasy of repetition. Similar considerations dictated the decision to score a particular item only once per story even though it might be expressed multiple times.

The decision not to identify the hero was also dependent in large part upon the characteristics of the protocols. For many productions the identification of the hero was unclear. It was further hypothesized that in view of the operation of displacement mechanisms this analytic refinement is unessential.

Another frequently used analytic approach unsuitable for the E.M.H. group, particularly a group drawn largely from the lower socio-economic levels, is that involving verb forms, and adjective-verb ratios. Children of this group are uncertain of their use of grammatical form, use tenses interchangeably and frequently incorrectly for the meaning they wish to convey.

The Preliminary Scoring Device

The preliminary non-interpretive scoring device consisting of 128 items and its accompanying manual were tried out with two random samples of 100 children each and a "nomination" group consisting of 143 children considered "best adjusted" and "most maladjusted" by project examiners. (Appendix B) Coding was undertaken by a group of psychologists, some from the Bureau of Child Study and some from the Cooperative Research Project. Both the manual and the scoring device were revised as inadequacies and inconsistencies in the method became apparent. After the preliminary scoring of the two random samples, statistical analyses were made to determine whether age differences, chronological or mental, for individual items would make it necessary for age groups to be handled separately. Except for organization or story level there were few statistically significant differences between groups, indicating that it was justifiable to consider the range as a single group in examining for differemces between the well-adjusted and poorly-adjusted nomination groups.

Comparisons were made between the following groups:

Poorly-Adjusted Hostile vs Nominated Well-Adjusted

Poorly-Adjusted Non-Hostile vs Nominated Well-Adjusted

Poorly Adjusted Non-Hostile vs Nominated Poorly Adjusted Hostile [1]

Two methods of comparison were used: appearance-non-appearance of an an item; and use of item cut-off points determined by inspection of the curves of responses from the samples of two hundred.

### The Revised Scoring Device

Following the analysis of group differences the scoring device was revised on the basis of findings; some items were dropped entirely, some were combined, others were added. Protocols were then re-scored and an additional group of approximately two hundred protocols was scored using the revised system, now consisting of 100 items. The revised scoring device is shown in Appendix C.

---

[1] The classifications "poorly-adjusted hostile" and "poorly adjusted non-hostile" were derived from examiners' ratings on the Observation Checklist. Report by Mullen and Itkin, 1961.

## 4. Manual for Use of Work Sheet for Verbal Projective Techniques

### Non-Interpretive

The Work Sheet is designed for use with picture-story test productions of educable mentally handicapped children. In its present form it is intended for use only with this group; its use with normal and gifted children would probably require adaptations and elaboration of some areas.

Scoring a protocol by this method is not difficult, but it is demanding in terms of attention and persistence. It must be kept in mind that, at this stage, interpretive judgment and psychological intutition must be restrained. Scoring should be undertaken only after thorough study of the Manual and with constant reference to the examples.

The aim of the manual is to make the scoring as objective as possible. This goal has been more nearly achieved for some areas than others. Situations not adequately covered by the examples will doubtless always be found. In these instances the scorer should be guided by the general tone of the protocol, scoring as accurately as the limitations of the present work sheet allow. Responses used for illustration have been chosen from actual protocols and are given for the most part in the actual words of the subject. Obvious examples have been held to a minimum, emphasis being given to borderline responses.

### General Scoring Directions

Scoring is done story by story with entries, usually in the form of a check mark, being made on the score sheet in the cell appropriate for item and story. Individual scorers may find it more convenient to score certain items for the entire series of stories rather than to consider the entire range of items for each story.

Items are scored for appearance in a story, not for number of times the item is mentioned in a single story. Contrary to some scoring practices, the hero is not defined.

The scoring manual has been set up to explain the general definition of each scoring item. The inclusion of an example under one item does not preclude the necessity for scoring this example in additional categories.

In deciding upon the scoring of an item it may be necessary to examine an entire protocol to determine which of several categories is most precise. In some instances similar statements from the protocols may be scored in different ways because of the different meanings conveyed by the context.

## Directions for Scoring Specific Items

### Productivity

The two items in this section can be entered only after the entire protocol has been scored. Starred items (namely 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 23, 93, and 95) are not included in determining these scores.

Item 1

Gross Productivity — The total number of entries on the coding sheet. A single item such as food mentioned in eight different stories contributes eight points toward this score. The maximum that a single item can contribute to the gross porductivity score corresponds to the number of cards to which the child was asked to respond, in this experiment ten cards.

Item 2

Limited Productivity — The total number of different items entered on the coding sheet. A single item such as food mentioned in eight stories contributes a single point.

### Organization

Scoring for level of organization represents a measure of the child's adequacy in following the specific instructions of the experiment; it does not involve a judgment of literary merit. Beyond the defined requirements, it does not reflect variety in content or breadth of ideas. It is possible for a short and ideationally meager production which has many negative features to qualify as a Level 3 story, while a richer protocol of more literary merit fails to meet the requirements.

In judging level of organization consider only the child's production before questioning.*Avoid reading the questions and answers until this judgment has been made.

Item 3

Story Level 3 To score at the highest level of organization all essential elements of a story must be included in the child's production, prior to questioning. These essential elements are defined as (1) a relationship between elements, (2) motivation and/or feeling pertaining to this relationship and (3) a complete time sequence which relates events to each other and ends in some resolution of events.

Relationship Between Elements

A relationship between elements is defined as an expressed ideational or emotional interaction between two living elements, human or animal; a living element and an object, an idea, an authority, or a group.

Credit:

"He is fighting with the man." "He is talking to the class." "He is thinking about writing a letter." "The girls are worried about school." "The women are going to a party to play bridge." "The man is going home to his wife."

No Credit: (no relationship)

" The woman is going to a party." "The man is going home." "The girl is looking at him."

Motivation and/or Feeling Pertaining to the Previously Scored Relationship

Credit in this area may be earned in any of three ways:

A. Motivation pertaining to relationship.

Example:

Credit: "The girl is worried about school and decided to study harder."

Non-Credit: "They are walking on the road."

---

* Exception: If an examiner has failed to follow the instruction to use only ambiguous urging to elicit response and has instead resorted to direct questioning immediately, score the answer to the first question as if it has been given without direct questioning.

B. Feeling pertaining to the relationship. A definite feeling of emotional involvement pertaining to the relationship.

Example:

Credit: "Somebody done something to him and he is mad."

C. Feeling and motivation pertaining to the relationship.

Example:

Credit: "Somebody hit him and he mad and he wants to fight him back."

Complete Time Sequence

A. Antecedent events

B. Present event

C. Outcome or conclusion

The events of the time sequence must be related to each other. Perfunctory endings, even though given without questioning, are not to be counted as conclusions in determining story level.

Example:

No credit for outcome or conclusion: " It end nice."

Example:

Scored: (Story Level 3) "This picture isn't very good. I can't tell no story." (urged) "He got on a grey shirt and she got on a white shirt. Maybe somebody done something to him and he mad. He want to go out and hit him, and she say, 'Joe you stay with me', and she don't let him go and he forget about it."

Explanation: Credit is given for the three essential elements; relationship, motivation and/or feeling, (both are met) and a complete time sequence.

Not Scored: (Story Level 3) "A friend of mine went swimming. He did not tell his mother and when he got home he got a whipping and punishment."

Explanation: The requirement for an expression of motivation and/or feeling failed to be met.

Item 4. Three types of responses are scored in the low level of organization category. Enumeration, description, and interpretation level one.

Enumeration: Naming separate items in a picture, without description or indication of relationship. (Includes mother, father, grandmother, etc., if used only as designation of an older person and as part of a sequence.)

Examples: Scored

"Books,desk, window, man, grandmother."

"I see books. I see windows, etc.

"Man."

Description

Requirement: Child mentions a static situation that is readily observable. Check individual picture in making this decision.

Example: Scored

"Desk with books on it near the window." (Card 3 MPT)

"The boy is standing up." (Card 4B MPT)

"The man is sitting down." (Card 4B MPT)

Not Scored:

"She is looking out the window." (Card 6 BM)

This is scored interpretation 1 since elements not actually observable in the picture are introduced.

Interpretation Level 1

Scoring of this item is limited to the introduction of elements not actually observable in the picture, without an indication of any relationship among the elements. Includes identification of characters or attributing actions, movement or feeling to them.

Example: Scored

"He is looking at something."

"He feels sad."

"The man is plowing."

"That's his mother."

Not Scored

"He is looking at that thing wondering what it is."

Scored as relationship on the basis of ideational interaction between elements.

Item 5.

No response: This is a card rejection indicating the child's inability or unwillingness to talk about the picture. Score also 2 lines or less (item 6), interrelationships (item 13), and evasive (item 24).

Item 6

Length of story: (2 lines or less) Thirty words or less or two lines of elite-type meet the requirements for this scoring. Longer stories are not scored for length of story. Meaningful length will be reflected in productivity scores.

In scoring the remainder of the work sheet, the child's entire production, including his answers to questions, is to be considered.

Item 7-10

Story Outcome: Story endings are to be scored according to their emotional tone as favorable, unfavorable or indeterminate.

If the conclusion is integrated with the main part of the story, no further marking is given. This applies whether the conclusion is given spontaneously or follows questioning.

The endings of some stories, however, lack integration with the events of the story and appear to be given only to satisfy the instructions or to answer questions regarding conclusion. Such endings have been termed "perfunctory".

The following types of endings are differentiated:

| | |
|---|---|
| Favorable<br>or<br>Unfavorable<br>Endings | Definitive endings (favorable or unfavorable) which are well integrated with the main part of the story. |
| | Favorable (or unfavorable) endings, modified by experiences of hesitancy or uncertainty. Note: The uncertainty expressed will be scored as an "expression of hesitancy" rather than an uncertainty as to outcome. |

Scored favorable:
(Item 7)

"....His father came home and fixed his violin and he was very happy."

".....So he helped the girl and she became a doctor in the village." "...She probably got to be famous."

Scored Unfavorable:
(Item 8)

"....This time his dad was really mad. He took his allowance away for a month." "Could be he never did learn to play the violin."

Favorable
and
Unfavorable

Conclusion is favorable to one major character, unfavorable to another in stories without a clearly designated hero.

Scored
(Item 7 and 8)

"This story look like this lady is madly in love with this man. He loves another lady. She told him, 'No, stay here with me.' He left her and went and married the other lady."

Favorable (or Unfavorable) and Perfunctory
Scored--Item 7 and 10

q.e. "It end good." "They lived happy ever after." (if this ending has no integration with story sequence.)

Scored - Item 8 and 10

"I don't know what happens, but it ends very sad."
(q.e.) "It end bad."

Indeterminate
Item 9
Scored:

"He started to think of something." "So the mother said, 'Don't chase after rabbits no more.'" "She going to jail and in the end she'll get out and go back to her mother." "She was talkin' and makin' noise in school so at the end she done her homework and went on home."
(q.e.) "I don't know."

Not scored:

"Maybe she got to be famous."

Explanation: This is scored "favorable" with "expression of hesitancy."

| | |
|---|---|
| Indeterminate Perfunctory | "It end all right." |
| Scored Item 9 and 10 | "It end OK." |
| General Characteristics: (Items 11-27) | |
| Item 11 Incoherence: | Absence of logical ideational relationship between parts of a story. Incoherence due to lack of syntactic skills is not included |
| Scored: | "His father say, 'Lemme see your report card.' He signed it and he go to school. The teacher say, 'You goin' to improve?' He clean out the fish bowl and he improve and this time he pass and it end happy."<br>"Man say, 'Get away.' 'Cut it out.' He ran and ran and ran and that's all. He got $1.00 bill and Spanky hit him on the toe with a hammer. That's all Teach'."<br>"The policeman saw the boy and brought him home and the mother was glad he had come home and she said. 'Why?' And he said he wanted to make some money. She said, 'OK.' That's all." |
| Item 12 Repetition | "Cracked record" effect.<br>Child may repeat one or two sentences many times.<br>"He got up and he went to work and he came home and went to bed and he got up and went to work, etc."<br>"This big girl is goin' to school and she goin' to come back home for lunch and she's be home again and then she went back to school. Then her father and mother was workin' with the horse and she came home." |

"Once there was a man and a woman and they were very hard to get along with because her husband like to have pet dogs in the house, and his wife she didn't like no pets in the house and she told him, "You got to get used to not having pets in the house..."

Item 13

No interrelationships: The area of interrelations covers contact between two persons, between a person and an animal, or between two animals. Failure to mention such interaction is scored in this category.

Item 14

Bizarre content: Sensational, extravagant and unrealistic content.

Scored: "Dey say his arm wasn't no better and dey have to cut it off. Den dey move to the country and his arm grew back and he was happy." "That a statue there." (Card 2)

Item 15

Dramatic form: The story teller plays the role of one or more characters, without indicating the change of roles. A story teller relating a story in the first person may also be playing a dramatic role.

"She say, 'Officer, thank you for bringing my son in.' 'Oh, you welcome.'"

"His father said, 'What's wrong son?' 'Nuthin' father.' 'Tell me what's wrong.' 'Ain't nuthin' botherin' me. I'm going upstairs, father.'"

"Mrs., your son was jumping on other people's roofs and would like to know if you will watch him." And she said, "OK, I'll take care of him."

**Item 16**

**Use of quotation:** The direct report of a remark made by one person or a conversation between two or more people involving the quotation of the remarks made by each. Direct reports of thought not actually expressed verbally are also included in this category.

**Score:** "She said, 'Thank you very much!'" "He said, 'Mother may I go out with the kids?' And she said, 'No you gotta practice first.'" "He was thinkin,'what am I gonna do now'."

**Item 17**

**Proper names of human or animal** Geographical or place names are not included in this category.

**Scored:** "George...", "The Tigers....".

**Not scored:** "They lived in Chicago." "He asked Mother what to do."

**Item 18**

**Over attention to details:** Includes (1) Enumeration of an excessive number of details. Details used for enrichment or details pertinent to the events of the story are not included. (2) Extraneous or non-pertinent details. (3)Unusual details.

**Scored:** "He went to the store and he bought oranges and vegetables and pears and beans, etc."

"He's sitting down. He's got his legs crossed."

"He got a mole on his nose."

"There's a lady standin by a tree. She got a rag around her head. She got on a dress. She got her arms folded."

**Not scored:** "They laid down by the oak tree.....and he said, when he was a little boy he would make boats and come down to this same brook and float his boat."

Item 19

**Response in the form of a question:** Subject makes a descriptive or interpretive response to the card but phrases it in the form of question.

Extraneous questions asked of the examiner or questions relative to the instructions are not scored. Questions asked by characters in the stories are not scored.

**Scored:** "That a lady?" "Is he cryin?"

**Not scored:** "What do you want me to do?"

"He said, 'You are Elvis Presley, aren't you?' "

Item 20

**Use of Alternatives:** Either-or situations. The story teller is undecided as to the situation and mentions two or more possibilities. Indecision or a conflict situation faced by a character is not scored here.

**Scored:** "Her husband might of run off or something."

"This little boy, or could be a woman, musta killed somebody," "Maybe the kids had a fight with her; maybe they just talked about her."

**Not scored:** "He didn't know whether he should buy a new one or fix the old one."

Item 21

**Black-white-grey-light-dark**

**Scored:** "He got a black coat on." "Looks like its very dark in there." "It's getting dark outside ." "These lights look like they're shut off."

Item 22

**Color reference** Any reference to a specific color, other than black, white or grey is included. Brown is currently scored in this category rather than in the black, white, grey classification.

Scored: "She had on a red dress."

"He had blond hair."

Not scored: "She was drawing with colored pencils."

"There was one white boy and three 'colored' boys."

**Item 23**

**Sex uncertainty--cross reference**

On Card TAT 3BM - Boy identifies figure as girl.
Girl identifies figure as boy.

On Card MPT 12 - Boy makes girl central character or vice versa.

On Card TAT 2 - Boy fails to mention male character or girl fails to mention female character.

On Card TAT 1 and MPT 7 - Boy identifies character as female.

Child ignores the figure on the card and introduces a character of opposite sex about whom he develops a story.

**Item 24**

**Evasive, non-committal**

A direct attempt to avoid the story telling situation by silence, body gestures of refusal, or verbal protest.

**Item 25**

**Expressions of hesitancy**

The story teller makes his statements in a tentative manner.

"Maybe...". "Looks like..."

"I think...". "Probably... ".

"It could be..." "It might be...".

Not Scored: "He thought he might go to his friends house."

Item 26

Picture criticism — Inadequacies in the picture are pointed out.

Scored: "This picture isn't very good."

"It's all so dark I can't see anything."

Item 27

Sign-off formula — The ending of the story is designated by a specific word or phrase which may or may not be unique to the individual. These sign-off statements are to be scored regardless of location within the protocol. Frequently a child says, "That is all," then proceeds to enlarge upon his production.

Scored: "That's all." "And they lived happily ever after."

Action Positive

Item 28

Work physical, or unspecified — An individual is actively engaged in or concerned about working

Scored: "The man plowin'." "He painted the house." "He lost his job." "Maybe he thinkin' to go and find another job." "The man went to work."

Item 29

Work, intellectual or artistic — An individual is actively engaged in or concerned about intellectual or artistic activity. The stimulus situation must be evaluated in making this judgment. On cards TAT 2 and MPT 7, for example, a statement that someone is "going to school" would qualify for scoring this item; on card MPT 3, however, simply being "in school" would not justify such scoring. Active engagement in intellectual or artistic activity such as reading, making a picture, or teaching the children how to do arithmetic would be required for scoring this card. Coming home from school is not scored for this item.

Scored: "They was singin' a song.""A boy is readin'."

| | |
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| Item 30 | |
| Socialising, recreation, romance | Recreational activities whether solitary, or group are included in this item. Work, physical, intellectual or artistic, may also be scored as recreation if it is so represented in context. |
| Scored: | "Sometimes we run and jump." "Some boys are goin' to the woods. It was vacation." "They was outside playing on their bikes." "When he got through work he sat down and read a book." "He was watchin T.V." |
| Item 31 | |
| Active searching for solution | The recognition of a problem situation and an attempt to meet this through individual efforts alone, or through enlisting the help of others who are in a better position to handle the problem. |
| Scored: | "He thinkin what he goin to do about that sore. He might put something on it so he can go right back outside again." "They're goin out lookin' for their dog and they finally found it." "This boy guitar is broken. He'll probably ask his father if he could fix it." "He was sick so he went to the doctor." "They thinkin' about goin' to the city. They saved up so they could go." "That boy lookin' at a boat. He studying a way to fix it." "He's goin' to call the police." |
| Item 32 | |
| Acknowledging culpability | An individual admits that he has been responsible for some wrong doing. |
| Scored: | "The man drivin' the truck didn't blow his horn and one of the boys got hit. The man came down to the police station and told them what happened." "This little boy |

broke a car window and he went and told his father." "He said,'I will never go on the railroad tracks again I will be a good boy from now on."

Item 33

Rectifying errors--making restitutions

An individual takes the responsibility for attempting reparation for some loss to property or esteem which his wrong doing has caused or he is forced by others to take such action.

Scored: "The boy broke a car window and now he will have to start saving his allowance to pay for the car window." "He musta stole something and his mother wants him to give it back to the one it belongs to." "Is this your son? He has to pay damage--he broke some window panes." "He hurt that little boy's feelings so he went back and said he was sorry."

Item 34

Performing duties

This item is defined in a limited way as the carrying out of small chores such as light work of household or farm. Attitudes toward a child's academic activities or toward an army service may be presented in this light, but these are specific cases, and not a general rule.

Scored: "She didn't clean the house right." "He didn't want to do the dishes." "She ironin'." "He was takin' care of the horses." "He had to do his homework before he could go out to play." "He got a letter saying it was time for him to go to the army."

Item 35

Exercising self-control

Exemplary behavior, contrary to personal wishes, customary or previous behavior and accomplished with some effort is classified under this item. A mere statement of intention to behave in this manner is not sufficient for this scoring.

Scored:

"When he went back to school he finished all his work and he never did a bad thing again." "His mother was talkin' to him and he got mad. He never talked back to his Mama." "He's sorry he didn't learn his work and he's gonna learn it from now on."

Item 36

Facilitating interpersonal interrelationships

This item is defined as any action which will contribute toward maintaining, improving or accomplishing smoother interpersonal relationships. It includes the areas of social amenities, making concessions or promises for the sake of harmony, or doing favors for others.

Scored:

"Jim said, 'Mother, I will be a good boy from now on." "He told the teacher he'd write what she wanted him to to write." "Thank you for bringing my baby home." "He said, 'I'm going to share it with all the boys!" "Her husband came back to her and apologized." "I think she and the other girl will make up." "Her father bought her a new doll." "The girl said 'hello'."

Item 37

Assuming responsibility for the welfare of others

Assuming responsibility for the welfare of others. Included here are all efforts to contribute toward the personal well being of others. In scoring this item consider whether the item would be more precisely covered by scoring item 36.

**Scored:** "Someone will pick him up. They will take him to the doctor." "He makin sure that the childrens are safely across the street." "The policeman grabs him and puts him on the sidewalk and tells the boy,'Only cross at the corner.'" "The police said, 'Let that woman go before I shoot you down.'" "She doesn't want him to go and she says he shouldn't,because somethin' might happen to him."

## Action negative

### Item 38

**Accident**

Any event damaging to persons or property not caused intentionally.

**Scored:** "The little boy he slip and hit his head on the rocks." "They was playing ball and the ball broke the man's window."

**Argument, dispute**

Any verbal disagreement between two people. If physical violence is involved, score as 52 (violence--fighting). The word "fight" is frequently used to designate a verbal altercation. The scorer must make the decision on the basis of the protocol and the characters involved which is the more precise scoring.

**Scored:** "He musta had a fight with his mother 'cause his mother looks like she's mad."

### Item 40

**Concealing wrong doing, lying**

Any activity carried out, in a surreptitious manner because of a desire to avoid threat of punishment or apprehension.

Scored: "They say that when I play games I cheat all the time." "He told his mother he'd practice his violin and then he snuck out the window."

Item 41

Crying

Included here is any mention of crying, whether with grief, pain or joy.

Scored: "He was crying because he couldn't find his way home." "The kid beat him up and he went home bawling." "She was so happy she could cry."

Item 42

Death

Death, natural, accidental, violent or punitive, whether to people or animals is scored in this area. Murder is given a separate scoring category and is not scored here.

Scored: "They went to the funeral."

Item 43

Destruction of property

Damage to property actually occuring in the protocol or mentioned as an existing state. Destruction may have been either accidental or deliberately caused.

Scored: "His violin was broken." "He got mad and broke his toy." "He missed the ball and it broke the window." "Someone must of torn it up."

Item 44

Illness

Major illnesses either mentioned directly or inferred from the total situation, are included in this category. Minor ailments are more precisely covered by the area "physical discomfort."

Scored: "They had to take him to the hospital." (Unless the more precise interpretation is physical injury)

Item 45

Murder

Scored: "The man was a killer." "It's a lady cryin 'cause she shot her husband. Probably she got a life sentence for manslaughter."

Item 46

Mutilation

This score is reserved for the mangling or dismemberment of human or animal bodies, living or dead. Surgery is not considered mutilation.

Scored: "The lion ate his leg off." "When I go down South if my grandmother's mule dies I'll cut off it's head and bring it back to you."

Item 47

Physical injury

Any damage, slight or extensive, incurred through accident, altercation, war, or self infliction is scored here. If the injury is classified Item 47 "Mutilation", however, it would not be scored additionally.

Item 48

Punishment

Any penalty imposed on another for some fault or misdemeanor. This includes corporal and physical punishment, incarceration, deprivation of priveleges, scolding, or any unique form of discipline imposed for the purpose of changing behavior.

Scored: "She was playin' around and talkin' so the teacher made her stay in." "The mother came and whipped her."

Item 49

Shifting responsibility to others

Blaming others or attributing to them responsibility for some action or event which might be viewed critically.

| | |
|---|---|
| Scored: | "Dis story about me. When I was real little my grandmother used to make me beat up little kids." "The man asked the four boys what was wrong and they said, 'This boy got us lost. He said that we was goin' the right way, and we said we wasn't.'" |
| Item 50 | |
| Sleeping | Any statement of sleeping, dreaming or of waking up is scored in this category. "Going to bed" has not been scored for this item. |
| Scored: | "He went to bed and he had a dream," "When he wake up in the morning." |
| Item 51 | |
| Stealing | Robbery, housebreaking, hold-up, or any form of activity undertaken with the intent to acquire property illegally is scored "stealing." |
| Item 52 | |
| Violence (fighting) | Fighting involving physical attack, war, shooting. |
| Scored: | "The cowboy shot him." "He's thinking he go fight him." "He look like he been fightin'" |
| Item 53 | |
| Violating rules, mischief | This item covers minor mischief and violation of mores as well as rules.. The attitude of the characters involved, rather than the scorers evaluation is to be considered in deciding whether a rule or more has been violated. |
| Scored: | "That's a bad boy." "The cop ring the mother's bell. He could been runnin across the street." "The teacher is tellin them to do their homework for the next day and some children didn't do it." "Her husband was gettin' drunk and runnin' around with other women." |

## Content Categories

Item 54

**Animal**

Any mention of an animal whether appearing in the picture or introduced by the story teller is scored for this item. Domestic, wild, or imaginary animals are included as well as amphibians, reptiles and birds.

Scored: "He was taking care of the horses." "He wanted a little pony." "They must be lookin for some frogs."

Not scored: "They went fishin and caught some fish."

Explanation: Score for recreation. If the fish are cooked or eaten, score for food.

Item 55

**Blood**

Any mention of blood or bleeding is scored.

Scored: "Blood keeps him livin'." "His lips is bleeding."

Item 56

**Cleanliness--dirtiness**

Use of any terms descriptive of "cleanliness" or "dirtiness" or activity resulting in such conditions is scored for Item 56.

Scored: "He went out and got in the mud." "She washed the dishes." "He had a dirty face." "She told him to wash his hands."

Item 57

**Clothing**

Any enumerative, descriptive or evaluative mention of a specific article of clothing or of any activity involving clothing, such as dressing, changing clothes, making clothes is scored for this item.

Item 58

**Fire--arson**

Any mention of fire or destruction by fire is scored. If arson is involved, score also for destruction of property ( Item 43) and violating rules (Item 53).

Scored: "He could see flames." "The house burned up."

Item 59

Food--drink

Any mention of eating, drinking, or of specific foods or beverages should be scored in this category. Chewing gum has also been included in this category.

Scored: "The lady cookin'." "They had breakfast." "The lady by the tree watchin' her husband plant vegetables."

Item 60

Money

Specific mention of money, or of making a payment expected to be in money, such as rent or a debt. "Buying" and "selling" without mention of a transaction involving money are not to be scored.

Scored: "Daddy gave me a quarter." "He was thinkin' about what it would be like if he was rich." "He had to borrow from his mother and he paid her what he owed her."

Item 61

Numbers

Any specific mention of numbers is scored, whether referring to age, time or amount. Any statement involving one man two women four boys etc., whether or not this is an accurate description of the card is to be scored.

Scored: "Four boys are goin for a walk."

Item 62

Religion

Statements involving going to church, saying prayers, or references to God and Heaven, the Devil and Hell are included in this category.

Scored: "They are readin' and prayin'." "She was readin' a Bible." "He was afraid he'd go to Hell."

Item 63

Sex

Reference to seeking and enjoying the company of the opposite sex, falling in love, or getting married are scored for sex. Occasionally, acquiring a wife or husband seems to fall into the category of acquiring a possession, and in that instance "sex" would not be scored.

**Scored:** "He probably married a girl," "The man ran off with another lady and she came home and he was mad at the lady 'cause the lady had done went out with another man." "He wanted to take a date out."

**Item 64**

**Water**

Any mention of bodies of water, wetness, or rain is to be scored "water". If water refers to a beverage, score "food--drink" not "water".

**Scored:** "Way out there is a lake." "Her mother is putting water down in the dirt." "Her fingers got wet. Maybe it was rainin'."

**Item 65**

**Weapons**

Specific weapons or objects utilized as weapons are scored in this category.

**Scored:** "He threw his pocket knife on the floor." "He picked up a rock and went after the guy."

**Item 66**

**Other**

This item has been reserved for responses unique to a record. It would not be scored unless the category appeared two or more times. Currently this item is not being included in the productivity score. Examination of the items which appear in this category may suggest inclusion of other specific items.

## Feelings Positive

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|---|---|
| Item 67 | |
| Affection--love--admiration | A positive attraction or reaction to another person or animal, expressed either as a feeling or as an action. |
| Scored: | "Everybody made friends with her and everybody liked her." "This lady is in love with him." "She got the highest average in the classroom and her parents were proud of her." "She must gonna kiss him." "He was proud of himself." |
| Item 68 | |
| Courage | Behavior which displays bravery, or description of characters as brave or fearless. |
| Scored: | "The house was on fire and he ran in there and saved the little girl." |
| Item 69 | |
| Happiness--joy--eagerness | Expressions of pleasure and of emotional and physical well being.<br>Scored: "He got a drink of water and then he feels real good." |
| Item 70 | |
| Sympathy--empathy | Expression of compassion and pity.<br>Scored: "It looks like something is going to happen to him and she's sorry about it." |

## Feelings Negative

| | |
|---|---|
| Item 71 | |
| Depression--discouragement | Expression of unhappiness |
| Scored: | "The teacher is very disappointed." "He feel sick about it." |

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|---|---|
| Item 72 | |
| Deprivation | An expression of being in want, either of necessary material things, or of expected emotional attachment or support. |
| Scored: | "She poor. She ain't got nuthin'." "The crops was dry and they would have nothin' to eat until it rained and so as time went on all they ate was bread and vegetables and water." "They were very poor and all they had was one pair of shoes for each of them, until the little girl her shoes wore out and she could not go to school." "She didn't have nobody to love her." |
| Item 73 | |
| Distaste, disgust | Expressions of aversion, dislike or displeasure. |
| Scored: | "It seems like she didn't like the story." "The children ran away from their mother. They don't like their mother and they are goin' away." "The boy was sad; he didn't like to play music." |
| Item 74 | |
| Fear, anxiety, worry, mistrust, embarrassment | "She can't write nothin' down, 'cause she's too scared." "She's ready to kill herself, so she won't get in jail." |
| Item 75 | |
| Guilt, remorse, regret | |
| Scored: | "The man thinks it's all his fault, 'cause if he hadn't left her she would have been all right. He's ready to kill himself." |
| Item 76 | |
| Hostility, anger | |
| Scored: | "She hauled off and hit the girl." "She looks like she's mad." |

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|---|---|
| Item 77 | |
| Inferiority, jealousy | Feelings of inadequacy in comparison with others. |
| Scored: | "He felt like cryin' 'cause all the kids was better than he was." |
| Item 78 | |
| Loneliness | Feelings of unhappiness arising from being alone, or without emotional attachments. |
| Scored: | "He's sad. He have no friends." "He cry for her; his wife dies, and then he have no friend." |
| Item 79 | |
| Pain and physical discomfort | Both major and minor distress including hunger and thirst are included in this category. Weariness and tiredness have a separate category, Item 81. |
| Scored: | "The boy was crying, because his mother beat him." "He feel awful. He go get a drink of water and then he feel real good." |
| Item 80 | |
| Resignation | Accepting misfortunes as something which cannot be changed, or as something to which one must submit. |
| Scored: | "She says, 'What the use of goin' out and killin him? You never could bring back your daughter'." "So he just stayed down there like that, 'cause there was no place to get help and he just stayed there till his mother could find him." "They wanted to go real bad, but they knew they mother didn't have any money, so they'se have to wait." |

Item 81

Weariness, tiredness — Expressions of weariness, tiredness or resting. Sleep, mentioned without an accompanying expression of tiredness is not scored in this category.

Scored: "He's so tired he can't keep his eyes open no longer."

## Goals

To be identified as a goal, an area of striving must be clearly expressed or definitely implied by a description of goal seeking behavior. An entry in the Section "Goal Areas" necessitates scoring in the "Goal Achievement" area also. Several goals may be expressed in one story, all may have the same outcome, or each may have a different end result. This situation will require several entries in the "Goal Area" section and one or more entries in the "Goal Outcome" section. Another possibility is that several characters in a story may have the same goal, but the outcome may be different. In this event there would be a single entry in the section "Goal Areas," but several entries in the section "Goal Achievement." Goals and the methods for achieving these goals may be either socially approved or disapproved.

### Areas

Item 82

Accomplishment--current--future — The desire for the attainment of an objective not more precisely described in other goal areas.

Scored: "He wishes he could be a violin player." "He wanted to play music." "He wanted to raise vegetables." "They started talkin' what they goin' to be." One boy say he'll be a mailman." "She think when she grow up she goin' to be a teacher or a nurse or an airplane hostess." "Boy was tryin' very hard at school. He wanted to get better marks. He tried hard."

Item 83

Avoidance of trouble (positive)

Implies the recognition of a problem situation and a desire to apply corrective or precautionary measures.

Scored: "She doesn't want him to go outside and get hurt. She thinks he ought to stay in and take a hot bath or something." "The lady she probably tellin the man to pay his rent and the man he probably ain't got no money to pay it. Probably got him a job and he make money and he pay his rent." "Now the teacher said to her class, 'What would you do if there was a bomb dropped on N.Y.?' Mike said, 'I know what we should do. We should take shelter and wait...."

Item 84

Escape

Implies the recognition of a problem or distasteful situation and the intention of handling it by evasive or escapist methods, including suicide.

Scored: "She is ready to kill herself so she won't go to jail." "Some little boys was running away." "He didn't like school, so he ditched."

Item 85

Knowledge

A desire for knowledge itself rather than for the secondary gains of such attainment is required for this scoring.

Scored: "She went to the library and read some books because she wanted to know all about farming."

Item 86

Material possessions

The desire for money or material possessions.

Scored: "Brother wants a new BB gun." "She wanted a new dress with a flower to wear to school." "He wanted to be rich."

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|---|---|
| Item 87 | |
| Perfection | The desire for flawless accomplishment. |
| Scored: | "She worked hard to get every problem right." "She wished she was good." (behavior) |
| Item 88 | |
| Personal affiliation | A desire for a close attachment, usually emotional, to another person or animal. |
| Item 89 | |
| Retaliation--revenge | The desire to "get even" or to pay someone back for hostile behavior previously experienced. |

Level of Activity

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|---|---|
| Item 90 | |
| Overt | Goals which remain on a fantasy or thought level are not classified as overt. Definite action with intention of attaining a goal is required for scoring this item. |

Goal Achievement

This area covers the course of events relative to the goal. A goal which at first is blocked may eventually be accomplished or changed.

| | |
|---|---|
| Item 91 | |
| Blocked | Events, or people may interfere or place obstacles in the way of the attainment of the goal. |
| Item 92 | |
| Accomplished | The desired goal is achieved; the method of attainment is of no consideration. |
| Item 93 | |
| Indeterminate | The protocol fails to express the outcome of the goal. |

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| Item 94 | |
| Changed | The original goal is abandoned or modified in the course of the protocol. |

## Supplementary Items

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|---|---|
| Item 95 | |
| Gross misidentification of stimulus | This item is currently limited to TAT Card 1. Identification of the violin as something other than some type of instrument which produces music is considered a gross misidentification. |
| Item 96 | |
| Self-reference | The subject involves himself in the story. |
| Scored: | "My own story. Most important I like to do in school is read and write and spell...' |
| Item 97 | |
| Ridicule | One individual makes fun of or laughs at another's inadequacies. |
| Scored: | "He couldn't read and all the kids laughed at him." |
| Item 98 | |
| Kidnapping | |
| Scored: | "He was afraid the gypsies would carry him off." |
| Item 99 | |
| Getting Lost | |
| Scored: | "He ran away from home and then he couldn't find his way back." |
| Item 100 | |
| Inadequate human | Individuals described as having permanent disabilities which would interfere with their leading a normal life, such as being crippled, blind, etc. |
| Scored: | "He never did get better, and he had to be in a wheel chair."<br>"He turned out to be a monster, and he couldn't find no doctor to help him." |

## 5. Personality Scales

The second major step in the system involved postulating a series of personality scales made up of items from the scoring device. Grouping of items was dictated by the literature on projective tests and drew heavily on the ego psychology and Gestalt theory basic to such tests. Like the schematic device, the scales also were dictated by the experimental group. The protocols themselves seemed to demand certain scales and the items to fall into logical groups. On the basis of the data and theoretical pertinences the following eleven scales were postulated: X or Abnormality, Ineffective Thinking, Low Self-Concept, Hostility, Anxiety, Passivity (male and female), Optimism, Super-ego, Positive Value System, Negative Value System. Scoring items which did not fall into the tentative scales, yet clearly characterized the protocols, were retained in the belief that their meaning would become clearer through statistical and evaluative comparison with known behavioral data.

The 455 protocols which had been scored according to the revised method were next scored for each of the eleven hypothesized scales. Point biserial correlations were then computed between each of the items and each of the total scale scores. In the selection of the criterion groups for the item analysis of the hypothesized scales, criterion groups were selected for boys and girls separately. Upper criterion groups consisted of above median scores on any particular scale, lower criterion groups of below median scores. For scales correlating above .40 with gross productivity, criterion groups were selected for three levels of productivity: (a) upper quartile, (b) middle 50 per cent, and (c) lower quartile on productivity. Where adjustment was made for productivity in the selection of criterion groups, above and below median scores on the respective scales were determined for each productivity level. The three upper groups were pooled and the three lower groups were pooled, giving a single upper criterion group and single lower criterion group. In one instance of a high negative correlation, -.65 with the Ineffective Thinking Scale for girls, the item-scale correlations were computed for criterion groups both adjusted and not-adjusted for productivity. Tables 2 and 3 give correlations of each item with each scale, separately for boys and girls. Following this analysis, a new scale, the "Insecurity" scale was hypothesized in substitution for the previously hypothesized "Anxiety", "Low Self-Concept", and "Pessimism" scales. Revision of the other scales in terms of statistical findings would have been desirable at this point, but exigencies of time interfered. One additional scale, Effective Productivity was also postulated. Correlations between scored items and the originally postulated scales are given in Tables 2 and 3. The same tables indicate the items which are included in the newly formulated Insecurity and Effective Productivity scales.

## 6. Definition of Scales

Individual scales are specifically defined in their application to this scoring system. This is necessary because the semantic inadequacy of the non-specific titles may arouse disparate, even contradictory images in the reader.

### Gross Productivity

The Gross Productivity score reflects the degree of effort and cooperation displayed during the testing situation. It is hypothesized that the child who performs adequately in this situation will display a similar willingness and ability to behave cooperatively in other interpersonal situations.

### Effective Productivity

Basically, the Effective Productivity Scale represents a measure of the child's adequacy in following directions and his ability to utilize variety in content and a breadth of ideas. A child who scores high in this scale has successfully met the challenge of the story telling situation. We can hypothesize that if he can be successful in this situation, he can be successful in other life situations.

### Ineffective Thinking Scale

The Ineffective Thinking Scale, on the other hand, represents the inadequacy of the child's performance in dealing with the assigned task. At the most extreme, this represents total lack of response whether caused by emotional or intellectual factors. Lesser degrees of inadequacy represent perfunctory or evasive responses which carry out few of the basic instructions. It may be hypothesized that the child who functions minimally in this task will also function inadequately in other life situations.

### X or Abnormality Scale

The X Scale represents an extreme deviation in thought patterns, including bizarre interpretation of the environment, and ideational incoherence. It is hypothesized that high scores on this scale will be associated with personality abnormality, and exclusion from the "Well-Adjusted" classification.

### Positive Values Scale (Va + Scale)

The Va + Scale reflects the extent to which the child's stories show his concern with middle class values and goals. Research findings have clearly shown that the values accepted and transmitted by the school are those of the middle class; consequently we would expect the child who accepts these standards as his own to be classified as "Well-Adjusted" in the classroom, and, conversely, who deviates from these values to be "Poorly-Adjusted" in the classroom. The scale also detects extreme concern with conformity, a useful variable in personality evaluation.

### Emotionally Determined Responses

The three scales "Hostility", "Passivity", and "Insecurity" represent types of emotionally determined response. It is hypothesized that emotional responsivity is an essential ingredient of positive mental health; it is "normal" to be hostile in some situations, passive in some, and insecure in some; not to experience or to express such emotion would be abnormal or unrealistic. When an individual is either under- or over-reactive, or when an imbalance between types of reactivity exists, maladjustment may be expected. It is imperative, therefore, that these scales be considered interrelatedly and that change in scale scores be interpreted with reference to original status. Under different circumstances, like degrees of movement may indicate desirable or undesirable change.

### Hostility

Hostility is defined as an oppositional tendency. In its lesser degrees it includes feelings of anger, a willingness to contradict or argue for principle; at highest degree it could include destruction of life and property.

### Passivity

Passivity is defined as a receptive, unassertive pattern of reaction. In its positive phase it represents a sensitivity to and acceptance of cultural values. At the opposite extreme it represents submissive dependence or an unquestioning willingness to concede to outside pressures regardless of whether good or bad.

### Insecurity

Insecurity is defined as an apprehensive, uncertain, possibly pessimistic, attitude. In minor degrees it represents a tendency to tread lightly and gauge "the lay of the land". In the extreme it represents a crippling anxiety.

## 7. Stanine Scores

Progressing toward the ultimate goal, clinical evaluation of individual cases, the next step involved the conversion of raw scale scores into scores statistically comparable. This was necessary in order that the relative saliency of the various scales in the functioning personality could be evaluated. The first step in the determination of stanine scores involved the correlation of raw scale scores and gross productivity scores. The following scales were found to be unrelated to gross productivity, or related only to a negligible degree: X Scale, Ineffective Thinking, and Hostility. For the scales which were correlated with gross productivity, that is, Insecurity, Passivity, and Positive Values Systems, stanines were computed separately for each of three levels of productivity, the lower level covering the first quartile, the middle level covering the second and third quartiles, and the upper level covering the fourth quartile. For all scales, stanine scores were determined for boys and girls separately. Tables of stanine scores are given in Appendix D.

### 8. Levels of Adjustment

In order to make comparison with the measures of adjustment represented by the criterion groups, it was hypothesized that certain score patterns were representative of levels of adjustment. Seven levels were detailed. While these levels accept the broad concepts of the system, in essence they violate its basic foundation, which is the clinical evaluation of the interrelationship between scale scores for the individual case. Their use at this time is justified as a necessary step in validation of the system.

In detailing the seven "levels" of adjustment, the adequately functioning child is described as one who meets the following criteria:

(1) He sees the world as it is seen by others.
(2) He is reactive to the world in which he lives.
(3) He is emotionally responsive but not dominated by emotionality.
(4) He identifies with middle class mores.
(5) He is personally motivated toward achievement.
(6) He behaves cooperatively in interpersonal situations.
(7) His intellectual functioning is not inhibited by emotional or organic factors.

Desirable and undesirable stanine scores for each of the eight scales were hypothesized. Requirements of each of the seven levels of adjustment are given in Appendix 5.

## 9. Reliability and Validity [2]

Test-retest reliabilities over a one-year interval calcuated for single scales range from .30 to .56. For three scales, Gross Productivity, Effective Productivity, and Ineffective Thinking test-retest reliabilities were above .50. Test-retest reliability of the adjustment levels over a one-year period, corrected for coarse grouping, was .63. Though, as has been pointed out in Chapter 7, this use of adjustment levels is not considered adequate for individual diagnosis, the method does give consideration to the interrelationship between scales which is basic to this interpretive system. Consequently, the greater stability of the adjustment level score over scores for individual scales points toward reliability of the system as a whole.

The available evidence for construct validity is meager. Studies were made using four different criterion groups: (1) "nomination" groups described in Chapter 3, (2) adjustment criterion groups based upon agreement of teachers and examiners, (3) criterion groups of achieving and non-achieving E.M.H. children, and (4) Criterion groups based on progress in achievement during a one-year interval. The three latter groups are described in Mullen and Itkin (1961). The results are given in Tables 4 and 5. Using above and below median scale scores, Ineffective Thinking differentiated between upper and lower adjustment groups. Gross Productivity, Effective Productivity, the X Scale and Ineffective Thinking differentiated between the upper and lower initial achievement groups. Scale scores failed to discriminate between children making slow and rapid progress.

Using the seven adjustment levels with four criterion groups, only one relationship, that between low scores in adjustment level and the group nominated poorly-adjusted, was found to be significant. Very low but significantly positive relationships were found between adjustment levels and the Sociometric Questions ratings and between Adjustment levels and the Cooperative Research Project Interest Maturity Test.

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[2] Statistical designs were developed and procedures were handled by Dr. William Itkin and the statistical staff of the Cooperative Research Project.

## Interpretation

The criterion groups which have been used in these validity studies are admittedly gross and each is comprised of children widely different in many ways, including personality. The maladjusted group may be expected to include children with symptoms of mental illness, violent children, fearful children, children behaving in a manner unacceptable to the school but condoned by the home, and children exercising healthy rebellion. The Well-Adjusted group likewise includes an infinite variety of personality types who are truly well-adjusted; it may also include some who are basically maladjusted, though their problems are unrecognized.

The achievement and the progress groups are not less heterogeneous. The low achiever may be maladjusted, or he may not have been taught; the high achiever may be a well-adjusted, well functioning child or he may be emotionally maladjusted. It would be a poor test of personality and a poor method of interpretation that found homogeneity in the criterion groups. Further investigation of the validity problems is essential.

## 10. Needed Research

The method of personality evaluation based on picture story test protocols which has been presented here cannot be considered more than tentative until verified by further research. Each of the three essential steps must be re-evaluated: the individual items and their scoring, the composition of the personality scales, and the evaluative appraisal of personality.

Next research steps should converge from several distinct but interrelated studies. These steps, which could most effectively be undertaken concurrently, are:

(1) Clinical evaluation of the TAT-MPT profiles of the subjects in the Matched-Pair Experiment reported by Mullen and Itkin (1961). The final judgmental steps regarding saliency of personality factors in the functioning child and of personality changes occurring over a period of time should give further evidence on the question of the relative effectiveness of the two types of placement and provide further evidence on the question of the validity of the method.

(2) Completion of the analysis of the interrelationship area for the same group of protocols analyzed by the method reported in this monograph. Integration of the two fractional methods of analysis should clarify the interpretive process and contribute to a refinement of the method.

(3) Comparison of teacher's evaluations of adjustment with TAT-MPT indications of adjustment.

(4) Follow-up studies of children tested in the Matched-Pair Experiment.

(5) A study employing this method with the total membership of intact classrooms. Judgments of teachers and fellow students could converge meaningfully upon the problem of concurrent validity.

(6) Comparisons of productions of children of different socio-economic levels.

(7) A normative study extending the method into the range of the intellectually normal and gifted students. Such a study would undoubtedly require an extension and refinement of the system, particularly in the organizational areas. It would

clarify problems of differential diagnosis of E.M.H. children and expand the interpretative method to the broader intelligence range.

(8) Extension of the method to clinical cases for which psychiatric diagnoses are available.

(9) Analysis of the productions by individual cards.

(10) Exploration of the effectiveness of alternative cards.

## 11. Discussion and Summary

As part of the investigation of the relative merits of different methods of teaching EMH children a new system of analyzing picture-story protocols was developed. The system includes a non-interpretive schematization of the protocol, followed by a numerical summary and the assignment of scale scores descriptive of the functioning personality. The schematic framework and the objective normative data are conceived of as tools for the clinician in his evaluative interpretation of the individual protocol.

Each of the successive analytic steps presented here is considered tentative and subject to revision after further essential research.

Since current norms were derived from a population not considered a random sample of EMH children, and from protocols obtained from specific picture stimuli under a specific set of directions, users must evaluate results with reference to these limitations.

Results of preliminary studies on reliability and construct validity are reported and further research steps are outlined. Extension of the system to cover the picture-story productions of children of normal and superior intelligence is suggested.

## References

Andrew, Gwen, Hartwell, S.W., Hutt, M.L., and Walton, R. E. The Michigan Picture Test. Science Research Associates, Chicago, 1953.

Mullen, Frances A. and Itkin, W. Achievement and Adjustment of Educable Mentally Handicapped Children in Special Classes and in Regular Grades. Board of Education, Chicago, Illinois, 1961

Murray, H. A. Thematic Apperception Test. Cambridge: Harvard University Press, 1943.

## Appendix A

Directions for Administration *

Arrange the pictures in correct sequence before the child enters the examining room. Show only one picture at a time to the child. When he had completed his story for a picture, it should be removed from his sight. For the first picture say, "I am going to show you some interesting pictures. I'd like you to make up a story, about each picture. Any kind of a story will be all right. Just tell me what has happened in the picture and how it is going to turn out, just as if you were making up a whole story. You can tell me how the people in the story feel and what they are doing."

The child's story is to be recorded verbatim. If he omits essential parts of the story he should be questioned on all omitted parts using the following notations and questions:

| | |
|---|---|
| 1. (h) Question happenings | "What is happening?" |
| 2. (p) Question past | "What happened before?" |
| 3. (t) Question thought | "What is he thinking about?" |
| 4. (f) Question feelings | "How does he (or they) feel about it?" |
| 5. (O)(e) Question outcome, ending | "How does it turn out? How does it end?" |

Gentle urging is advisable through the first three or four cards. After the first few pictures the directions may be shortened to: "Here is another picture. Make up a story for this one."

For card 12 say: "Here is a blank card. Let's see how good your imagination is. This time make up any kind of story you like about this blank card."

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* Adapted from MPT

## Appendix B

## DIRECTIONS FOR USE OF THE NOMINATING TECHNIQUE

The nominating method of arriving as classifications is by definition a subjective one, vulnerable because of errors of judgment, misinformation, lack of information and personal bias. Despite these shortcomings it is felt that each examiner has in his possession some valuable general impressions about the "extreme" children he has met and possibly some hypotheses about the direction their lives may take. It is felt that the lists that the examiners can supply will have real value and can be put to good use.

Steps to be followed in selecting nominees:

1. Without referring to your files, list the children you best remember as examples of extreme behavior (positive or negative).
2. Check your impressions against the evidence in the child's folder- (without referring to TAT-MPT,Protocols, Ethical Comprehension, or Teacher ratings).

(Cues which may be useful in deciding upon classifications will be found following the general definitions of adjustment and maladjustment as used in this study.)

3. As you check your files, if you note that the characteristics of other children indicate that certain ones should be classed at either extreme, add these names to your list. If there is serious doubt in your mind whether a child should be classified as either "adjusted" or "maladjusted" omit from your list of nominations.
4. When your lists are complete, indicate the rank order of the two lists. (#1 on the "maladjusted" indicating the most seriously maladjusted and #1 on the "adjusted" indicating the best adjusted).

Definitions:

The maladjusted child utilizes his characteristic behavior and reaction patterns indiscriminately whether appropriate to the situation or not. Hostility, withdrawal, or over-compliance may be healthy methods of adjustment in certain situations, but any one of these mechanisms which persists regardless of the stimulus situations, and results in inefficient functioning which is detrimental to the child as a person, harmful to other people or to the child's relationship with other people may be considered as within the maladjusted area.

The well adjusted child has a flexible adjustment pattern which makes it possible for him to utilize different reaction patterns in accordance with the demands of the situation, maintain his sense of personal worth, benefit and learn from his experiences, and at the same time enjoy mutually satisfying relationships with peers and with adults.

In general the patterns of behavior which point to the child's classification must be more than transient, that is, in the opinion of the judge, these patterns are the salient and persistent characteristics of the child. The following cues are given as an aid in selecting nominees for the two extreme groups. The lists are not to be considered as complete, but merely as illustrative.

Cues for maladjusted child- (A child may show more than one of these behavior patterns).

1. The hostility aggressive child who fights his way and carries a chip on his shoulder.
2. The child who withholds cooperation and resists friendly advances. The type of child with whom one cannot establish rapport despite one's best efforts. The child who has a history indicating a lack of friendly relationships with children and adults.
3. The child who runs away from situations, the truant, the run-away.
4. The child whose excessive desire for acceptance and approval results in the suppression of his own wants and needs and the effective expression of his personal identity. The child who tries too hard to do what he thinks is expected of him.
5. The never naughty child who adheres too strictly to adult standards of behavior.
6. The child whose history shows that his conflicts have been internalized to the detriment of his health--resulting in difficulties such as ulcers,

asthma, obesity, malnutrition, (not based on poor diet) or other ailments diagnosed as psychosomatic.

7. The child who manifests overt delinquent behavior.

Cues for the well-adjusted child (A child may show more than one of these behavior patterns).

Because of the necessity for greater reliance on inference in judging good adjustment, it is expected that nominations for the well-adjusted group will be made with greater difficulty, less certainty and greater margin of error.

1. The child who shows enthusiastic interest in one or more areas of socially acceptable activity.
2. The child who is able to achieve academically at approximately his mental age grade expectancy without such excessive strain that he suffers, physically, emotionally, or socially.
3. The child who evidences a "normal" amount of conflict with family, peers, or school situation.
4. The child who enjoys mutually satisfying relationships with peers and adults.
5. The child who does not manifest the characteristics noted under the maladjusted child.

N.B. Initial shyness and devices which release tension under pressure conditions (such as the test situation) should not disqualify a child if he manifests strongly other characteristics which would indicate his inclusion in the well-adjusted group.

## Work Sheet for Verbal Projective Techniques (Non-Interpretive)

| Item | **Productivity** | 1 | 2 | 3 BM | 4 | 6 | 3 | 4 BG | 7 | 11 BG | 12 | Item | Scor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Gross Productivity Score | | | | | | | | | | | 1 | |
| 2 | Limited Productivity Score | | | | | | | | | | | 2 | |

| | **Organization** | 1 | 2 | 3 BM | 4 | 6 | 3 | 4 BG | 7 | 11 BG | 12 | Item | Scor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | Story Level 3 (prior to questioning) | | | | | | | | | | | *3 | |
| 4 | Enumeration-Description-Interpretation | | | | | | | | | | | *4 | |
| 5 | No response (despite questioning) | | | | | | | | | | | *5 | |

| | **Length of Story** | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Scor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 2 lines or less | | | | | | | | | | | *6 | |

| | **Story Outcome** | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Scor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 | Favorable | | | | | | | | | | | *7 | |
| 8 | Unfavorable | | | | | | | | | | | *8 | |
| 9 | Indeterminate | | | | | | | | | | | *9 | |
| 10 | Perfunctory | | | | | | | | | | | *10 | |

| | **General Characteristics** | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Scor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | Incoherence | | | | | | | | | | | *11 | |
| 12 | Repetition | | | | | | | | | | | *12 | |
| 13 | No interrelationships | | | | | | | | | | | *13 | |
| 14 | Bizarre content | | | | | | | | | | | *14 | |

| | | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Scor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | Dramatic form | | | | | | | | | | | *15 | |
| 16 | Use of quotation | | | | | | | | | | | *16 | |
| 17 | Proper name | | | | | | | | | | | 17 | |
| 18 | Over-attention to detail | | | | | | | | | | | 18 | |
| 19 | Response in form of question | | | | | | | | | | | 19 | |

| | | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Scor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | Use of alternatives | | | | | | | | | | | 20 | |
| 21 | Black-White-Grey | | | | | | | | | | | 21 | |
| 22 | Color reference | | | | | | | | | | | 22 | |
| 23 | Sex uncertainty- Cross ref. | | | | | | | | | | | *23 | |
| 24 | Evasive, non-committal | | | | | | | | | | | 24 | |

| | | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | Expressions of hesitancy | | | | | | | | | | | 25 | |
| 26 | Picture criticism | | | | | | | | | | | 26 | |
| 27 | "Sign-off"formula | | | | | | | | | | | *27 | |

* Items not included in productivity scores.

| Item | Action Positive | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 28 | Work-physical | | | | | | | | | | | 28 | |
| 29 | Work- intellectual-artistic | | | | | | | | | | | 29 | |
| 30 | Socializing, recreation, romance | | | | | | | | | | | 30 | |
| 31 | Active searching for solution | | | | | | | | | | | 31 | |
| 32 | Acknowledging culpability | | | | | | | | | | | 32 | |

| | | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 33 | Rectifying errors - making restitution | | | | | | | | | | | 33 | |
| 34 | Performing duties | | | | | | | | | | | 34 | |
| 35 | Exercising self-control | | | | | | | | | | | 35 | |
| 35 | Facilitating interpersonal relations | | | | | | | | | | | 36 | |
| 37 | Assuming resp. for welfare of others | | | | | | | | | | | 37 | |

| | Action Negative | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 38 | Accident | | | | | | | | | | | 38 | |
| 39 | Argument, dispute | | | | | | | | | | | 39 | |
| 40 | Concealing wrong doing-lying | | | | | | | | | | | 40 | |
| 41 | Crying | | | | | | | | | | | 41 | |
| 42 | Death | | | | | | | | | | | 42 | |

| | | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 43 | Destruction of property | | | | | | | | | | | 43 | |
| 44 | Illness | | | | | | | | | | | 44 | |
| 45 | Murder | | | | | | | | | | | 45 | |
| 46 | Mutilation | | | | | | | | | | | 46 | |
| 47 | Physical injury | | | | | | | | | | | 47 | |

| | | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48 | Punishment | | | | | | | | | | | 48 | |
| 49 | Shifting responsibility to others | | | | | | | | | | | 49 | |
| 50 | Sleeping | | | | | | | | | | | 50 | |
| 51 | Stealing | | | | | | | | | | | 51 | |
| 52 | Violence (fighting) | | | | | | | | | | | 52 | |
| 53 | Violating rules, mischief | | | | | | | | | | | 53 | |

| | Content Categories | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 | 12 | Item | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 54 | Animals | | | | | | | | | | | 54 | |
| 55 | Blood | | | | | | | | | | | 55 | |
| 56 | Cleanliness-dirtiness | | | | | | | | | | | 56 | |
| 57 | Clothing | | | | | | | | | | | 57 | |
| 58 | Fire-arson | | | | | | | | | | | 58 | |
| 59 | Food-drink | | | | | | | | | | | 59 | |

| | | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 | | Item | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 60 | Money | | | | | | | | | | | 60 | |
| 61 | Numbers | | | | | | | | | | | 61 | |
| 62 | Religion | | | | | | | | | | | 62 | |
| 63 | Sex | | | | | | | | | | | 63 | |
| 64 | Water | | | | | | | | | | | 64 | |
| 65 | Weapons | | | | | | | | | | | 65 | |
| 66 | Other | | | | | | | | | | | 66 | |

| Item | Feelings Positive | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 67 | Affection-love-admiration | | | | | | | | | | | 67 | |
| 68 | Courage | | | | | | | | | | | 68 | |
| 69 | Happiness-joy-eagerness | | | | | | | | | | | 69 | |
| 70 | Sympathy, empathy | | | | | | | | | | | 70 | |
| | **Feelings Negative** | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Score |
| 71 | Depression, discouragement | | | | | | | | | | | 71 | |
| 72 | Deprivation | | | | | | | | | | | 72 | |
| 73 | Distaste, disgust | | | | | | | | | | | 73 | |
| 74 | Fear, anxiety, worry, mistrust | | | | | | | | | | | 74 | |
| 75 | Guilt, remorse | | | | | | | | | | | 75 | |
| 76 | Hostility, anger | | | | | | | | | | | 76 | |
| | | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Score |
| 77 | Inferiority, jealousy | | | | | | | | | | | 77 | |
| 78 | Loneliness | | | | | | | | | | | 78 | |
| 79 | Pain, physical discomfort | | | | | | | | | | | 79 | |
| 80 | Resignation | | | | | | | | | | | 80 | |
| 81 | Weariness, tiredness | | | | | | | | | | | 81 | |
| | **Goals**<br>**Areas** | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Score |
| 82 | Accomplishment - current - future | | | | | | | | | | | 82 | |
| 83 | Avoidance of trouble (positive) | | | | | | | | | | | 83 | |
| 84 | Escape | | | | | | | | | | | 84 | |
| 85 | Knowledge | | | | | | | | | | | 85 | |
| | | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Score |
| 86 | Material possessions | | | | | | | | | | | 86 | |
| 87 | Perfection | | | | | | | | | | | 87 | |
| 88 | Personal affiliation | | | | | | | | | | | 88 | |
| 89 | Retaliation - revenge | | | | | | | | | | | 89 | |
| | **Level of Activity** (related to goal) | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Score |
| 90 | Overt | | | | | | | | | | | 90 | |
| | **Goal Achievement** | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Score |
| 91 | Blocked | | | | | | | | | | | 91 | |
| 92 | Accomplished | | | | | | | | | | | 92 | |
| 93 | Indeterminate | | | | | | | | | | | 93 | |
| 94 | Changed | | | | | | | | | | | 94 | |
| | **Supplementary Items** | 1 | 2 | 3 BM | 4 | 6 BM | 3 | 4 BG | 7 | 11 BG | 12 | Item | Goal |
| 95 | Gross misidentification of stumulus | | | | | | | | | | | 95 | |
| 96 | Self-reference | | | | | | | | | | | 96 | |
| 97 | Ridicule | | | | | | | | | | | 97 | |
| 98 | Kidnapping | | | | | | | | | | | 98 | |
| 99 | Getting lost | | | | | | | | | | | 99 | |
| 100 | Inadequate human | | | | | | | | | | | 100 | |

## Appendix D

### Stanine Scores

**Productivity Scales**

**Gross Productivity**

| Stanine | Boys N=258 | Girls N=197 |
|---|---|---|
| 1 | 10-20 | 10-19 |
| 2 | 21-31 | 20-26 |
| 3 | 32-40 | 27-35 |
| 4 | 41-49 | 36-44 |
| 5 | 50-59 | 45-57 |
| 6 | 60-72 | 58-72 |
| 7 | 73-89 | 73-85 |
| 8 | 90-101 | 86-109 |
| 9 | 102-165 | 110-140 |

**Effective Productivity**

| Stanine | Boys N=258 | Girls N=197 |
|---|---|---|
| 1 | 1-13 | 1-8 |
| 2 | 14-16 | 9-13 |
| 3 | 17-22 | 14-19 |
| 4 | 23-28 | 20-25 |
| 5 | 29-34 | 26-30 |
| 6 | 35-40 | 31-37 |
| 7 | 41-45 | 38-44 |
| 8 | 46-50 | 45-50 |
| 9 | 51-63 | 51-64 |

## Stanine Scores (Cont'd)

### Scales Unadjusted for Productivity

Raw Scores

**X or Abnormality Scale**

| Stanine | Boys<br>N=258 | Girls<br>N=197 |
|---|---|---|
| 1 | - | - |
| 2 | 0 | 0 |
| 3 | 1 | 1 |
| 4 | 2 | 2 |
| 5 | 3 | 3-4 |
| 6 | 4-5 | 5-6 |
| 7 | 6-8 | 7-11 |
| 8 | 9-11 | 12-19 |
| 9 | 12-20 | 20-37 |

**Ineffective Thinking**

| Stanine | Boys<br>N=258 | Girls<br>N=197 |
|---|---|---|
| 1 | 0-1 | 0-2 |
| 2 | 2-3 | 3-5 |
| 3 | 4-7 | 6-9 |
| 4 | 8-10 | 10-14 |
| 5 | 11-15 | 15-18 |
| 6 | 16-19 | 19-23 |
| 7 | 20-23 | 24-27 |
| 8 | 24-29 | 28-35 |
| 9 | 30-39 | 36-47 |

**Hostility**

| Stanine | Boys<br>N=257 | Girls<br>N=197 |
|---|---|---|
| 1 | 3-6 | 2-4 |
| 2 | 7-10 | 5-7 |
| 3 | 11-12 | 8-10 |
| 4 | 13-15 | 11-13 |
| 5 | 16-19 | 14-16 |
| 6 | 20-23 | 17-20 |
| 7 | 24-29 | 21-24 |
| 8 | 30-34 | 25-28 |
| 9 | 35-46 | 29-35 |

## Stanine Scores (Cont'd)

**Scales Adjusted for Productivity**

**Positive Value**

| | Boys | | | Girls | | |
|---|---|---|---|---|---|---|
| | Productivity Quartiles | | | Productivity Quartiles | | |
| | $Q_1$ | Middle 50% | $Q_3$ | $Q_1$ | Middle 50% | $Q_3$ |
| Stanine | N=65 | N=126 | N=67 | N=49 | N=99 | N=49 |
| 1 | - | 1-3 | 3-7 | 0 | 1-3 | 4-5 |
| 2 | 0 | 4-5 | 8-10 | 1 | 4 | 6-9 |
| 3 | 1 | 6-7 | 11-13 | 2-3 | 5-7 | 10-12 |
| 4 | 2-3 | 8-9 | 14-15 | 4 | 8 | 13-16 |
| 5 | 4-5 | 10-11 | 16-20 | 5 | 9-11 | 17-20 |
| 6 | 6-7 | 12-13 | 21-24 | 6 | 12-14 | 21-25 |
| 7 | 8-9 | 14-15 | 25-27 | 7-8 | 15-18 | 26-28 |
| 8 | 10-13 | 16-20 | 28-30 | 9-10 | 19-20 | 29-34 |
| 9 | 14-15 | 21-26 | 31-33 | 11+ | 21-25 | 35-45 |

**Passivity**

| | Boys | | | Girls | | |
|---|---|---|---|---|---|---|
| | Productivity Quartiles | | | Productivity Quartiles | | |
| | $Q_1$ | Middle 50% | $Q_3$ | $Q_1$ | Middle 50% | $Q_3$ |
| Stanine | N=65 | N=126 | N=67 | N=49 | N=99 | N=49 |
| 1 | 0 | 2 | 3-5 | 0 | 1-2 | 1-4 |
| 2 | 1 | 3 | 6 | 1 | 3 | 5-6 |
| 3 | 2 | 4 | 7-8 | 2 | 4 | 7-8 |
| 4 | 3 | 5-6 | 9-12 | 3 | 5-6 | 9-12 |
| 5 | 4 | 7-8 | 13-14 | 4 | 7-8 | 13-14 |
| 6 | 5-6 | 9-10 | 15-18 | 5 | 9-10 | 15-17 |
| 7 | 7 | 11-12 | 19-20 | 6-7 | 11-12 | 18-19 |
| 8 | 8 | 13-14 | 21-23 | 8-13 | 13 | 20-21 |
| 9 | 9-10 | 15-17 | 24-27 | 14-15 | 14+ | 22-30 |

**Insecurity**

| | Boys | | | Girls | | |
|---|---|---|---|---|---|---|
| | Productivity Quartiles | | | Productivity Quartiles | | |
| | $Q_1$ | Middle 50% | $Q_3$ | $Q_1$ | Middle 50% | $Q_3$ |
| Stanine | N=65 | N=126 | N=67 | N=49 | N=99 | N=49 |
| 1 | 5-8 | 4-9 | 10-12 | 10-11 | 3-7 | 6-7 |
| 2 | 9-12 | 10-12 | 13-14 | 12-14 | 8-11 | 8-15 |
| 3 | 13-15 | 13-16 | 15-19 | 15-17 | 12-16 | 16-19 |
| 4 | 16-19 | 17-20 | 20-24 | 18-19 | 17-21 | 20-23 |
| 5 | 20-22 | 21-24 | 25-28 | 20-23 | 22-25 | 24-27 |
| 6 | 23-25 | 25-29 | 29-32 | 24-26 | 26-28 | 28-36 |
| 7 | 26-29 | 30-33 | 33-37 | 27-28 | 29-35 | 37-39 |
| 8 | 30-32 | 34-38 | 38-41 | 29-35 | 36-38 | 40-43 |
| 9 | 33-37 | 39-47 | 42-47 | 36-38 | 39-44 | 44-45 |

## Appendix E

### Adjustment Levels

|  | Level 1*<br>(Lower-Lower)<br>Sort 1 | Level 2<br>(Middle-Lower)<br>Sort 5 | Level 3<br>(Upper-Lower)<br>Sort 6 | Level 4<br>(Middle-Middle) | Level 5<br>(Lower-Upper) | Level 6<br>(Middle-Upper) | Level 7<br>(Upper-Upper) |
|---|---|---|---|---|---|---|---|
| Gross Productivity | 1-2 | no req. | 1-2 | Does | 1-2 | 4-9 | 5-8 |
| Effective Productivity | 1-2 | no req. | 1-2 | not | 1-2 | 4-9 | 5-8 |
| Va+ | 1-2 | 1-3 | 1-2 | meet | 1-2 | 4-9 | 5-8 |
| X Scale | 8-9 | 7-9 | 8-9 | criteria | 8-9 | 1-3 | 1-3 |
| Ineffective Thinking | 8-9 | 7-9 | 1-2 or 8-9 | for any of | 8-9 | 1-3 | 1-3 |
| Hostility | no req. | 1-2 or 7-9 | 1-2 or 8-9 | three upper | 1-2 or 8-9 | 2-7 | 3-7 |
| Passivity | no req. | 1-2 or 7-9 | 1-2 or 8-9 | or | 1-2 or 8-9 | 2-7 | 3-6 |
| Insecurity | no req.<br>Meets all indicated requirements | 1-2 or 7-9<br>Meets all of first 3 one of last three requirements | 1-2 or 8-9<br>Meets at least two but not all of indicated requirements | three<br>lower<br>levels | 1-2 or 8-9<br>Meets none of these requirements | 2-7<br>Meets all of these requirements | 3-6<br>Meets all of these requirements |

* In determining adjustment levels cases were examined for their eligibility for extreme levels first. As they failed to meet the criteria for the extreme level their eligibility for the adjacent level was considered. Sequences proceeded from either end toward the middle category, which became in effect a residual category.

Table 1

Characteristics of Cooperative Research Project Matched-Pair Experiment Sample

| | | | | | |
|---|---|---|---|---|---|
| CA: | Mean 11.346 | Standard Deviation: 1.804 | | | |
| MA: | Mean 7.713 | Standard Deviation: 1.251 | | | |
| IQ: | Mdn. 69.78 | Q1 = 65.55 Q3 = 72.28 Q=3.365 | | | |
| Sex Distribution: Total N=667 | | Males: 373 (55.9%) Females: 294 (44.1%) | | | |
| Socio-Economic Community Ratings: | | I - II | III | IV | V+ |
| (Ranges from I-II (lowest), IV (average), X (highest) | | 454 (68.1%) | 145 (21.7%) | 48 (7.2%) | 20 (3.0%) |

## Table 1

### Characteristics of Cooperative Research Project Matched-Pair Experiment Sample

| | | |
|---|---|---|
| CA: | Mean 11.346 | Standard Deviation: 1.804 |
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| IQ: | Mdn. 69.78 | Q1 = 65.55 Q3 = 72.28 Q=3.365 |
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| Socio-Economic Community Ratings: | I - II | III | IV | V+ |
|---|---|---|---|---|
| (Ranges from I-II (lowest), IV (average), X (highest) | 454 (68.1%) | 145 (21.7%) | 48 (7.2%) | 20 (3.0%) |

## Table 2

Scoring Keys and Summary of Item-Scale Correlations TAT-MPT Scales (Boys)

| Item | X Scale | In. Th. | Host. | Va - | Self. N | Adj. In. Th. | Va+ | S-E | Opt. | Anx. | Pess. | Pass. | Ins.[a] | Eff. Prod.[b] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2. | | | | | | | | | | | | | | * |
| 3. | -.18 | -.66 | -.04 | .11 | -.18 | | .26 | .22 | .26 | -.12 | -.03 | -.12 | | * |
| 4. | .20 | .56 | .03 | -.28 | .00 | | -.21 | -.37 | -.12 | .16 | .00 | .00 | | |
| 5. | * .40 | * .28 | * .22 | -.08 | -.14 | * | -.10 | -.04 | -.04 | .00 | .04 | -.19 | | |
| 6. | .21 | * .57 | * .29 | -.04 | .04 | * | -.19 | -.07 | -.09 | * .25 | .14 | -.14 | * | |
| 7. | -.20 | -.43 | -.07 | -.07 | -.05 | | .33 | .27 | * .62 | -.07 | -.08 | .01 | | |
| 8. | .03 | -.09 | .29 | .36 | .09 | | -.19 | -.10 | -.40 | .13 | * .53 | .07 | * | |
| 9. | .35 | * .32 | .04 | -.04 | -.03 | * | -.04 | -.12 | -.36 | .01 | -.07 | .20 | | |
| 10. | .11 | * .00 | .00 | .14 | .20 | * | -.17 | -.13 | .14 | .14 | -.03 | -.05 | | |
| 11. | * .47 | * .08 | -.16 | -.06 | -.30 | * | .13 | -.01 | -.01 | -.10 | -.06 | .32 | | |
| 12. | * .32 | * .13 | -.01 | -.12 | -.12 | * | -.11 | -.18 | -.05 | -.08 | -.10 | .01 | | |
| 13. | * .44 | * .53 | .07 | -.17 | -.03 | * | -.26 | -.11 | -.12 | * .24 | * .14 | -.11 | * | |
| 14. | * .28 | * .10 | .10 | .02 | .17 | * | -.10 | .17 | .17 | -.12 | .02 | .20 | | |
| 15. | * .26 | -.16 | .02 | -.09 | -.13 | | .15 | .18 | .18 | -.16 | -.02 | .00 | | |
| 16. | -.06 | -.41 | -.09 | .03 | -.19 | | .21 | .11 | .20 | -.09 | -.01 | .09 | | * |
| 17. | .00 | -.30 | -.03 | -.03 | -.26 | | .14 | .14 | .09 | .00 | -.01 | .17 | | |
| 18. | .23 | * .37 | -.17 | -.17 | -.01 | * | -.14 | -.20 | -.17 | * .18 | -.20 | .41 | | |
| 19. | -.02 | -.02 | -.02 | -.10 | * .11 | | -.02 | -.02 | .10 | * .00 | -.14 | -.10 | * | |
| 20. | -.28 | -.10 | -.03 | .03 | * .49 | | -.10 | -.06 | -.16 | * .22 | -.10 | .13 | * | |
| 21. | .09 | .12 | -.14 | -.12 | .00 | | -.10 | -.03 | -.22 | * .28 | -.03 | .41 | * | |
| 22. | .10 | .08 | -.10 | -.14 | -.21 | | .03 | .04 | -.02 | * .20 | .10 | .25 | | |

Table 2 (Cont'd)

| Item | X Scale | In. Th. | Host. | Va- | Sel. N. | Adj. In. Th. | Va+ | S-E | Opt. | Anx. | Pess. | Pass. | Ins.[a] | Eff. Prod.[b] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 23. | .05 | -.03 | -.10 | -.12 | -.01 |  | .08 | .09 | .15 | .09 | .08 | *.15 |  |  |
| 24. | .24 | .45 | *.29 | -.08 | .06 |  | -.24 | -.14 | -.25 | .10 | .02 | -.15 |  |  |
| 25. | -.33 | .00 | .01 | .01 | *.68 |  | -.11 | .06 | -.14 | *.41 | -.07 | -.08 | * |  |
| 26. | .13 | -.14 | *.13 | -.14 | -.02 |  | .13 | .13 | .18 | .13 | .00 | .00 |  |  |
| 27. | .04 | -.10 | -.10 | -.10 | -.12 |  | .04 | -.01 | .11 | -.01 | -.01 | .20 |  |  |
| 28. | -.06 | -.14 | -.14 | -.10 | .05 |  | *.25 | .08 | .12 | .12 | .03 | .13 |  |  |
| 29. | -.20 | -.43 | -.22 | -.03 | -.03 |  | *.63 | .13 | .26 | -.08 | -.08 | .08 |  |  |
| 30. | -.12 | -.24 | -.16 | -.02 | -.12 |  | *.47 | .17 | *.27 | -.06 | -.02 | .17 |  |  |
| 31. | -.26 | -.50 | -.18 | -.04 | .05 |  | *.43 | .24 | .22 | .03 | -.02 | -.02 |  |  |
| 32. | -.13 | -.32 | -.13 | .20 | -.09 |  | *.26 | *.34 | .18 | -.09 | -.09 | -.19 |  |  |
| 33. | -.06 | -.20 | .10 | .08 | .08 |  | *.20 | *.31 | .10 | *.14 | .06 | -.02 |  |  |
| 34. | -.18 | -.30 | -.14 | -.07 | -.02 |  | *.28 | *.26 | .08 | -.06 | -.24 | .08 |  |  |
| 35. | -.21 | -.38 | .14 | .11 | .14 |  | *.15 | *.30 | .15 | -.02 | -.07 | -.23 |  |  |
| 36. | -.33 | -.49 | -.06 | .03 | .03 |  | *.40 | .22 | .33 | *.04 | -.06 | -.10 |  |  |
| 37. | -.26 | -.36 | .09 | .04 | -.07 |  | *.34 | *.31 | .10 | -.07 | -.07 | -.08 |  |  |
| 38. | .03 | -.04 | *.28 | .10 | -.06 |  | .11 | .10 | .08 | *.17 | *.17 | .00 | * |  |
| 39. | -.14 | -.28 | *.17 | .24 | -.02 |  | -.02 | -.04 | .14 | -.18 | .00 | -.12 |  |  |
| 40. | -.10 | -.24 | .11 | *.41 | -.08 |  | .06 | .13 | .06 | -.04 | .00 | .02 |  |  |
| 41. | -.06 | -.12 | -.08 | .08 | -.06 |  | .10 | -.03 | -.03 | -.03 | *.05 | *.25 |  |  |
| 42. | -.02 | -.28 | *.24 | .08 | -.23 |  | .03 | .03 | .03 | -.11 | *.18 | .06 | * |  |
| 43. | -.11 | -.14 | *.26 | *.34 | .05 |  | .04 | .13 | .05 | *.26 | .18 | -.05 |  |  |

Table 2 (Cont'd)

| Item | X Scale | In. Th. | Host. | Va.- | Sel. N. | Adj. In. Th. | Va+ | S-E | Opt. | Anx. | Pess. | Pass. | Ins.[a] | Eff. Prod.[b] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 44. | .08 | -.20 | -.04 | .08 | -.04 | | .21 | -.10 | .09 | *-.04 | .05 | *.19 | * | |
| 45. | -.11 | -.13 | *.30 | *.44 | -.07 | | -.04 | .15 | -.13 | -.04 | .15 | -.07 | | |
| 46. | *.12 | .00 | *.16 | *.12 | -.10 | | .00 | .00 | .00 | .00 | .00 | .00 | | |
| 47. | -.03 | -.06 | *.37 | .19 | .03 | | -.06 | -.01 | -.06 | *.20 | *.30 | -.03 | * | |
| 48. | -.13 | -.37 | *.33 | .43 | -.01 | | -.01 | *.33 | -.10 | *.07 | .18 | -.04 | | |
| 49. | -.07 | -.18 | .22 | *.30 | -.07 | | .00 | .01 | .00 | -.07 | -.02 | -.18 | | |
| 50. | -.08 | .04 | .06 | -.04 | .04 | | -.08 | -.02 | .01 | *.26 | *.15 | *.27 | * | |
| 51. | -.18 | -.09 | *.31 | *.38 | .13 | | .00 | .15 | -.03 | .10 | .06 | .01 | | |
| 52. | -.18 | -.20 | *.32 | *.35 | -.10 | | -.03 | .15 | -.03 | -.05 | .08 | -.03 | | |
| 53. | -.22 | -.30 | *.16 | *.39 | .18 | | -.02 | .21 | -.02 | .06 | .02 | -.16 | | |
| 54. | .11 | -.07 | .01 | .06 | -.17 | | .01 | .06 | .03 | *.15 | .01 | *.35 | | |
| 55. | .05 | -.02 | *.22 | -.05 | -.02 | | .05 | .12 | -.10 | -.02 | .12 | .05 | | |
| 56. | .13 | .05 | .03 | -.12 | -.16 | | .15 | *.20 | .05 | *.17 | -.07 | .23 | | |
| 57. | .03 | .11 | -.27 | -.10 | -.10 | | .00 | .00 | -.20 | .04 | -.10 | *.52 | | |
| 58. | -.07 | -.15 | *.16 | .10 | -.04 | | -.04 | -.07 | -.04 | *.08 | .08 | *.18 | | |
| 59. | -.02 | -.31 | -.05 | -.15 | -.15 | | .16 | .10 | .07 | *-.02 | -.05 | *.34 | | |
| 60. | -.13 | -.40 | .01 | .04 | .05 | | .18 | .26 | .11 | *.18 | *.13 | .04 | | |
| 61. | .00 | -.26 | -.08 | -.12 | -.22 | | .13 | *.28 | .10 | *.04 | -.03 | .20 | | |
| 62. | .11 | .02 | .02 | .00 | .00 | | .08 | .02 | -.05 | .02 | .06 | *.22 | | |
| 63. | -.10 | -.41 | -.07 | .04 | -.17 | | .30 | .20 | .30 | -.07 | -.07 | .09 | | |

Table 2 (Cont'd)

| Item | X Scale | In. Th. | Host. | Va. - | Sel. N. | Adj. In. Th. | Va+ | S-E | Opt. | Anx. | Pess. | Pass. | Ins.[a] | Eff. Prod.[b] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 64. | -.02 | -.09 | -.10 | -.11 | .05 | | -.05 | -.05 | .03 | .11 | -.07 | *.34 | | |
| 65. | .02 | .08 | *.26 | .18 | -.09 | | -.06 | .00 | -.02 | .18 | .09 | .14 | | |
| 66. | .01 | .20 | -.22 | -.22 | -.05 | | -.05 | -.19 | -.19 | .22 | -.10 | .20 | | |
| 67. | -.13 | -.39 | -.07 | -.04 | -.18 | | .25 | .12 | *.40 | -.18 | -.11 | .04 | | |
| 68. | .02 | -.04 | — | .02 | -.04 | | .00 | .02 | *.00 | .00 | — | — | | |
| 69. | -.21 | -.13 | -.15 | -.33 | .04 | | .17 | .04 | *.43 | .04 | -.16 | -.09 | | |
| 70. | .00 | -.05 | .08 | .00 | -.05 | | .00 | .00 | *.08 | *.08 | .08 | -.05 | | |
| 71. | -.06 | .16 | .03 | -.06 | .19 | | -.09 | -.01 | .03 | *.27 | *.27 | -.15 | * | |
| 72. | -.03 | -.16 | .06 | .06 | .07 | | .00 | .10 | -.08 | *-.03 | *.12 | .07 | * | |
| 73. | -.07 | -.16 | .04 | .10 | -.02 | | .06 | .04 | -.04 | -.04 | *.04 | .04 | | |
| 74. | -.14 | -.37 | .03 | .04 | .04 | | .22 | .18 | -.03 | *.05 | *.22 | .03 | * | |
| 75. | -.19 | -.20 | .09 | .12 | * .27 | | .09 | *.30 | -.05 | *.16 | *.09 | -.01 | * | |
| 76. | .05 | .08 | *.43 | .25 | .05 | | -.30 | -.04 | -.34 | -.08 | -.01 | .08 | | |
| 77. | -.10 | -.20 | -.02 | -.04 | * .28 | | .08 | -.04 | .17 | *.10 | *.17 | -.04 | * | |
| 78. | .00 | .04 | -.04 | .00 | * .24 | | -.08 | -.08 | .10 | *.08 | *.10 | .00 | * | |
| 79. | -.02 | .00 | .22 | .04 | .00 | | -.02 | -.02 | .09 | .14 | *.27 | .13 | * | |
| 80. | -.10 | -.20 | .12 | .10 | .00 | | -.12 | .10 | .10 | .00 | *.12 | *.10 | | |
| 81. | -.09 | -.08 | -.09 | -.08 | * .18 | | .05 | .05 | -.05 | *.40 | *.09 | *.40 | * | |
| 82. | -.13 | -.29 | -.15 | -.13 | .08 | | *.23 | *.15 | .15 | -.06 | .08 | -.15 | | |
| 83. | -.20 | -.33 | .00 | .08 | .00 | | .28 | *.28 | .18 | *.08 | .08 | -.08 | | |

Table 2 (Cont'd)

| Item | X Scale | In. Th. | Host. | Va. - | Sel. N. | Adj. In. Th. | Va+ | S-E | Opt. | Anx. | Pess. | Pass. | Ins[a] | Eff. Prod.[b] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 84. | -.07 | -.23 | .10 | * .31 | -.09 |  | .10 | .09 | .08 | *-.09 | *.37 | *.19 | * |  |
| 85. | -.18 | -.18 | -.02 | -.10 | -.02 |  | *.10 | *.15 | .15 | .10 | .13 | -.02 |  |  |
| 86. | .01 | -.26 | -.03 | .01 | .01 |  | .10 | .10 | .18 | * .11 | .19 | -.01 |  |  |
| 87. | .02 | -.04 | .00 | .00 | .14 |  | *.00 | *.00 | .00 | -.04 | .20 | -.14 |  |  |
| 88. | .01 | -.38 | -.10 | .05 | -.01 |  | *.32 | .16 | .25 | *-.05 | -.01 | -.01 |  |  |
| 89. | -.16 | -.28 | * .18 | * .24 | .08 |  | .00 | .08 | -.06 | -.02 | .08 | -.06 |  |  |
| 90. | -.29 | -.44 | .06 | .24 | .06 |  | .17 | .09 | .17 | -.12 | .22 | -.02 |  |  |
| 91. | -.30 | -.42 | .13 | .14 | * .11 |  | .14 | .05 | .09 | * .11 | *.22 | .05 | * |  |
| 92. | -.21 | -.46 | -.10 | .00 | .00 |  | .30 | .18 | *.39 | -.13 | .10 | -.20 |  |  |
| 93. | .08 | -.02 | -.05 | .11 | * .18 |  | .01 | -.02 | -.10 | .08 | .15 | .18 | * |  |
| 94. | -.16 | -.36 | -.04 | .10 | -.08 |  | .14 | .12 | .21 | -.16 | .02 | -.04 | * |  |
| 95. | * .09 | .14 | -.02 | -.06 | -.09 |  | .02 | -.10 | .02 | .02 | .02 | .14 |  |  |
| 96. | * .17 | * -.12 | .11 | .11 | -.09 | * | .10 | .10 | .10 | -.09 | *.11 | .02 |  |  |
| 97. | -.28 | -.28 | * -.02 | .08 | * .14 |  | .00 | .02 | .08 | *.09 | *.14 | -.06 |  |  |
| 98. | -.10 | .00 | .15 | .12 | .10 |  | -.10 | ___ | *.12 | *.10 | .00 | -.18 |  |  |
| 99. | -.06 | .00 | -.12 | -.12 | -.04 |  | -.04 | -.06 | .02 | *-.09 | .02 | .02 |  |  |
| 100. | .10 | -.02 | .13 | -.02 | .13 |  | .13 | -.02 | .10 | * .02 | .10 | .10 |  |  |

Footnotes--a. The Insecurity Scale is a revised scale composed of selected items from the original "anxiety," "negative self concept" and "pessimism" scales.

b. The Effective Productivity is a newly formulated scale

* Indicate items keyed in their respective scales.

Table 3

Scoring Keys and Summary of Item-Scale Correlations TAT-MPT Scales (Girls)

| Item | X Scale | In. Th. | Host. | Va - | Self N | Adj. In. Th. | Va+ | S-E | Opt. | Anx. | Pess. | Pass. | Ins.[a] | Eff. Prod.[b] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2. | | | | | | | | | | | | | | * |
| 3. | -.37 | -.56 | -.11 | .28 | -.11 | -.43 | .22 | .36 | .31 | -.14 | .01 | -.08 | | * |
| 4. | .17 | .49 | .20 | -.15 | .11 | .33 | -.22 | -.20 | -.18 | .20 | .09 | -.04 | | |
| 5. | *.30 | *.32 | *.22 | -.16 | .00 | *.30 | -.16 | -.20 | -.16 | .00 | -.18 | -.16 | | |
| 6. | .10 | *.44 | *.44 | -.07 | .10 | *.24 | -.03 | -.07 | .00 | *.32 | .17 | -.11 | * | |
| 7. | -.37 | -.64 | -.09 | .19 | .13 | -.47 | .37 | .25 | *.06 | .12 | .02 | -.09 | | |
| 8. | -.05 | -.11 | .26 | .14 | .19 | -.09 | -.13 | .06 | -.09 | .10 | *.45 | -.05 | * | |
| 9. | .22 | *.60 | .08 | -.07 | .00 | *.53 | -.19 | -.17 | -.49 | .00 | -.03 | .10 | | |
| 10. | .09 | *.09 | -.12 | -.10 | .05 | *.05 | .05 | -.07 | .24 | .05 | -.06 | -.04 | | |
| 11. | *.43 | *.11 | -.07 | .09 | -.29 | *.25 | .00 | .00 | .00 | -.07 | -.15 | .25 | | |
| 12. | *.40 | *.20 | -.15 | -.09 | -.25 | *.27 | -.09 | -.09 | -.15 | -.15 | -.06 | .27 | | |
| 13. | *.65 | *.62 | .10 | -.35 | -.00 | *.45 | -.24 | -.31 | -.23 | .12 | *.00 | -.14 | * | |
| 14. | *.38 | *.10 | .00 | -.04 | -.08 | *.16 | -.10 | .05 | -.15 | -.10 | .05 | .00 | | |
| 15. | *.32 | .06 | -.12 | .15 | -.02 | .15 | .06 | .02 | -.09 | -.02 | .06 | .15 | | |
| 16. | -.25 | -.37 | -.16 | .18 | .13 | -.22 | .13 | .15 | .15 | .08 | .25 | .25 | | * |
| 17. | -.07 | -.28 | -.08 | .00 | -.10 | -.17 | .20 | .18 | .10 | .00 | .24 | .14 | | |
| 18. | .25 | *.30 | -.19 | -.19 | -.03 | .45 | -.21 | -.06 | -.25 | *.05 | -.17 | .09 | | |
| 19. | .12 | .22 | .00 | -.10 | *.22 | .14 | .00 | .06 | -.03 | * - | -.10 | -.03 | * | |
| 20. | .22 | .30 | .04 | .00 | *.53 | -.17 | .08 | .00 | .00 | *.33 | .06 | *.33 | * | |
| 21. | .10 | .07 | -.27 | -.26 | -.15 | .10 | -.06 | -.15 | -.06 | *.15 | -.09 | .15 | * | |
| 22. | .06 | .02 | -.02 | -.10 | -.12 | .08 | -.06 | .02 | .12 | *.16 | .12 | .06 | | |

Table 3 (Cont'd)

| Item | X Scale | In. Th. | Host. | Va - | Self N | Adj. In. Th. | Va+ | S-E | Opt. | Anx. | Pess. | Pass. | Ins.[a] | Eff.[b] Prod. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 23. | .08 | -.01 | .04 | .10 | .01 | .04 | .12 | .04 | .04 | .01 | .01 | .01 | | |
| 24. | .13 | .26 | *.24 | -.16 | .12 | .19 | -.14 | -.16 | -.12 | -.01 | -.07 | -.14 | | |
| 25. | -.29 | -.25 | .04 | .04 | *.66 | -.13 | -.06 | .04 | .04 | *.30 | -.04 | -.17 | * | |
| 26. | .00 | .00 | *.00 | .00 | -.18 | .10 | -.10 | .10 | .00 | .10 | -.18 | -.10 | | |
| 27. | .12 | .11 | -.11 | .09 | -.07 | .00 | .09 | .18 | -.11 | -.16 | -.19 | -.07 | | |
| 28. | -.11 | -.17 | --- | .03 | .14 | -.07 | *.42 | .14 | .20 | -.07 | -.12 | .00 | | |
| 29. | -.18 | -.18 | -.14 | .09 | .07 | -.09 | *.36 | .11 | .11 | -.08 | -.03 | .09 | | |
| 30. | -.22 | -.38 | -.10 | .12 | -.10 | -.10 | *.37 | .09 | *.38 | -.03 | -.03 | .07 | | |
| 31. | -.27 | -.32 | -.10 | .11 | .08 | -.20 | *.21 | .21 | .19 | -.03 | .07 | .00 | | |
| 32. | -.12 | -.16 | -.12 | .18 | -.20 | *.20 | *.26 | *.28 | .11 | .04 | -.20 | .00 | | |
| 33. | -.20 | -.22 | .12 | ND | .12 | -.20 | *.20 | * ND | .12 | * -.08 | -.12 | -.22 | | |
| 34. | -.02 | -.14 | -.10 | .20 | -.11 | .08 | *.27 | *.33 | .00 | -.14 | -.11 | .00 | | |
| 35. | -.25 | -.36 | .00 | .17 | .00 | -.30 | *.40 | *.32 | .22 | .00 | .03 | .00 | | |
| 36. | -.30 | -.56 | -.07 | .25 | .04 | -.34 | *.41 | .30 | .30 | *.15 | .04 | .08 | | |
| 37. | -.30 | -.38 | .03 | .50 | .00 | -.25 | *.34 | *.51 | .08 | .05 | .05 | .05 | | |
| 38. | -.24 | -.20 | *.26 | .16 | .07 | -.07 | .15 | .15 | -.06 | *.33 | *.25 | .09 | * | |
| 39. | -.20 | -.16 | *.08 | .08 | .15 | -.10 | .02 | .08 | .00 | .15 | .08 | .06 | | |
| 40. | -.16 | -.32 | .18 | *.30 | .10 | -.10 | .10 | .10 | -.08 | *.04 | .18 | .18 | | |
| 41. | -.17 | -.25 | -.03 | .17 | .17 | -.07 | - | .14 | .04 | .04 | *.19 | *.17 | | |
| 42. | .00 | -.18 | *.30 | .24 | .05 | -.11 | -.11 | .12 | -.02 | .05 | *.33 | .12 | * | |

Table 3 (Cont'd)

| Item | X Scale | In. Th. | Host. | Va - | Self N | Adj. In. Th. | Va+ | S-E | Opt. | Anx. | Pess. | Pass. | Ins.[a] | Eff. Prod.[b] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 43. | -.05 | -.21 | *.11 | *.08 | .07 | -.20 | .02 | .07 | .20 | *.08 | .15 | .01 | | |
| 44. | -.17 | -.33 | -.03 | .14 | -.08 | -.17 | .20 | .20 | .18 | *.18 | .23 | *.38 | * | |
| 45. | -.10 | -.10 | *.40 | *.38 | .14 | .08 | -.13 | .19 | -.08 | .03 | .19 | .03 | | |
| 46. | *.20 | .12 | *.09 | *.20 | -.08 | .12 | -.08 | .09 | -.12 | .12 | .09 | .09 | | |
| 47. | -.11 | -.20 | *.30 | .22 | .00 | -.11 | .03 | .18 | -.10 | *.09 | *.22 | .20 | * | |
| 48. | -.37 | -.42 | *.33 | .37 | .01 | -.21 | .03 | *.39 | .01 | *.03 | .19 | .03 | | |
| 49. | .00 | .00 | .00 | *.00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | | |
| 50. | .13 | .13 | -.14 | -.11 | .01 | .19 | .14 | .05 | -.18 | *.13 | *.05 | *.28 | * | |
| 51. | -.12 | -.20 | *.34 | *.28 | .20 | -.02 | -.02 | .10 | -.16 | .08 | .10 | .10 | | |
| 52. | -.18 | -.20 | *.28 | *.45 | .04 | -.14 | -.09 | .20 | .01 | .10 | .17 | .06 | | |
| 53. | -.37 | -.40 | *.09 | *.32 | .14 | -.22 | .14 | .29 | .09 | .14 | .18 | .07 | | |
| 54. | -.01 | -.04 | -.17 | -.10 | -.26 | .06 | .06 | -.10 | -.01 | *-.13 | .04 | *.32 | | |
| 55. | .18 | .18 | *.18 | .02 | -.10 | .10 | -.16 | .02 | -.10 | -.16 | .02 | .02 | | |
| 56. | .07 | -.03 | -.19 | .00 | -.17 | .24 | .10 | *.20 | .00 | *.10 | -.07 | .03 | | |
| 57. | .21 | .09 | -.32 | -.08 | -.15 | .32 | -.10 | -.03 | -.10 | -.03 | -.10 | *.27 | | |
| 58. | .02 | .12 | *.10 | .18 | -.10 | -.02 | -.10 | -.24 | .12 | *-.02 | .18 | *.12 | | |
| 59. | -.12 | -.21 | -.19 | .07 | -.10 | .01 | .27 | .15 | .07 | *-.08 | -.12 | *.27 | | |
| 60. | -.16 | -.39 | -.09 | .14 | -.06 | -.14 | .13 | .22 | .32 | *-.03 | *.14 | -.06 | | |
| 61. | -.13 | -.23 | -.08 | .11 | .03 | -.13 | .14 | *.37 | .00 | *.14 | -.01 | .08 | | |
| 62. | .08 | -.02 | .08 | .10 | .04 | .08 | .04 | .08 | -.02 | -.11 | .08 | *.38 | | |

Table 3 (Cont'd)

| Item | X Scale | In. Th. | Host | Va - | Self N | Adj. In. Th. | Va+ | S-E | Opt. | Anx. | Pess. | Pass. | Ins.[a] | Eff[b] Prod. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 63. | -.15 | -.26 | .21 | .18 | .07 | -.15 | -.01 | .15 | .26 | -.05 | .07 | -.09 | | |
| 64. | .25 | .13 | -.20 | -.09 | -.01 | .22 | .05 | .08 | -.09 | * .13 | -.14 | * .50 | | |
| 65. | .30 | .01 | * .00 | .22 | .09 | .09 | -.02 | .09 | .01 | -.02 | .09 | .01 | | |
| 66. | .10 | .18 | -.16 | -.10 | -.08 | .30 | -.10 | -.10 | -.13 | .10 | -.16 | -.04 | | |
| 67. | -.11 | -.28 | -.02 | .15 | -.09 | -.15 | .24 | .11 | * .37 | -.09 | .03 | .03 | | |
| 68. | .00 | -.10 | .00 | .12 | .00 | -.10 | .00 | .00 | * .00 | -.10 | .00 | .00 | | |
| 69. | —.04 | -.31 | -.04 | -.04 | .08 | -.18 | .06 | .03 | * .42 | .10 | -.10 | -.16 | | |
| 70. | -.20 | -.28 | -.18 | -.10 | .10 | -.16 | .15 | .15 | *.22 | * .10 | -.18 | .10 | | |
| 71. | -.10 | -.11 | .08 | .00 | .19 | .02 | -.16 | -.13 | .08 | * | * .41 | -.16 | * | |
| 72. | -.04 | -.30 | -.15 | .04 | .00 | -.15 | .06 | .21 | .00 | * .14 | * .21 | .21 | * | |
| 73. | -.16 | -.22 | .02 | .05 | .11 | -.19 | .02 | -.06 | .00 | .11 | * .11 | .05 | | |
| 74. | -.10 | -.18 | .01 | .08 | .11 | .01 | .04 | .04 | .06 | * .22 | * .24 | .11 | * | |
| 75. | -.33 | -.38 | .10 | .22 | * .32 | -.24 | .14 | *.25 | .06 | * .14 | * .00 | -.12 | * | |
| 76. | -.07 | -.13 | * .25 | .19 | .22 | -.11 | -.11 | .12 | -.01 | .07 | .01 | -.04 | | |
| 77. | -.24 | -.33 | .14 | .19 | * .25 | -.20 | .14 | .04 | .10 | * .19 | * .22 | .04 | * | |
| 78. | -.07 | -.16 | -.10 | -.04 | * .10 | .00 | .00 | -.12 | .00 | * .20 | * .26 | .11 | * | |
| 79. | -.04 | -.13 | .14 | .10 | -.04 | .14 | .10 | .02 | -.04 | .12 | * .25 | .25 | * | |
| 80. | .10 | -.10 | .00 | -.10 | .15 | .00 | .00 | .10 | -.10 | .00 | * .10 | * .00 | | |
| 81. | .11 | .08 | .03 | .06 | * .15 | .08 | .08 | -.09 | -.13 | * .15 | * .06 | * .28 | * | |
| 82. | -.28 | -.49 | -.18 | .07 | .12 | -.26 | * .38 | * .26 | .28 | .04 | -.07 | -.20 | | |

Table 3 (Cont'd)

| Item | I Scale | In. Th. | Host. | Va - | Self N | Adj. In. Th. | Va+ | S-E | Opt. | Anx. | Pess. | Pass. | Ins.[a] | Eff[b] Prod. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 83. | -.18 | -.13 | .14 | .28 | .14 | -.14 | .04 | * .21 | .04 | * .04 | .06 | -.14 | | |
| 84. | -.16 | -.11 | .22 | * .22 | .23 | -.09 | -.10 | .03 | .09 | * .28 | * .31 | *.22 | * | |
| 85. | -.02 | .13 | -.02 | -.14 | -.02 | .13 | * .13 | * .13 | .13 | -.02 | -.12 | -.02 | | |
| 86. | -.20 | -.37 | -.22 | .11 | -.08 | -.08 | .19 | .13 | .28 | *-.02 | * .08 | .08 | | |
| 87. | -.22 | -.22 | -.20 | -.08 | .09 | -.22 | * ND | * .12 | ND | -.08 | .09 | .09 | | |
| 88. | -.13 | -.32 | .05 | .00 | .16 | -.12 | * .38 | .03 | .30 | *.26 | .12 | -.06 | | |
| 89. | -.20 | -.20 | *.28 | * .30 | .10 | -.12 | .15 | .30 | .08 | .10 | .00 | -.10 | | |
| 90. | -.30 | -.47 | .03 | .18 | .22 | -.31 | .10 | .15 | .37 | .18 | .15 | .06 | | |
| 91. | -.23 | -.31 | .13 | .07 | * .27 | -.19 | .07 | .04 | .02 | * .30 | * .35 | .02 | * | |
| 92. | -.32 | -.58 | -.10 | .13 | .05 | -.37 | .33 | .13 | *.50 | .12 | .13 | .00 | | |
| 93. | .10 | .10 | -.01 | -.01 | * .24 | .21 | .07 | .05 | -.19 | .15 | .07 | .15 | * | |
| 94. | -.42 | -.27 | .10 | .10 | .10 | -.13 | .21 | .14 | .21 | .06 | .04 | -.02 | * | |
| 95. | * .12 | .04 | -.04 | .04 | -.04 | .10 | -.10 | -.10 | .04 | -.04 | .00 | .10 | | |
| 96. | * .17 | * .01 | .03 | -.08 | -.08 | *.17 | -.08 | -.05 | -.05 | -.08 | * .07 | .01 | | |
| 97. | -.18 | -.18 | * .19 | .14 | * .32 | -.20 | -.03 | .10 | -.08 | * .20 | * .25 | -.03 | | |
| 98. | .12 | .09 | .12 | .12 | -.07 | .12 | -.08 | .12 | -.08 | * .12 | .12 | .12 | | |
| 99. | -.18 | .10 | .10 | .22 | .10 | .10 | .07 | .15 | -.18 | * .10 | .15 | .17 | | |
| 100. | .02 | .02 | * .02 | .10 | .02 | .02 | .02 | .18 | -.10 | * .18 | .10 | .18 | | |

Footnotes-- a. The Insecurity Scale is a revised scale composed of selected items from the original "anxiety", "negative self concept" and "pessimism" scales.

b. The Effective Productivity is a newly formulated Scale.

* Indicate items keyed in their respective scales.

### Table 4

### Test-Retest Reliability, TAT-MPT Scales One-Year Test-Retest Interval N=256

| Scale | r |
|---|---|
| Gross Productivity | .54 |
| Effective Productivity | .56 |
| Abnormality Scale | .32 |
| Ineffective Thinking | .55 |
| Positive Values Systems | .35 |
| Hostility | .36 |
| Passivity | .30 |
| Insecurity | .38 |
| Adjustment Levels | .61 |

## Table 5

## Construct Validity on TAT-MPT Scales

Relationships Between TAT-MPT Scales and Criterion Groups on Initial Achievement in Reading, Arithmetic, and General Information and General Comprehension.

| X- Scale | Below Median X-Scale | Above Median X-Scale | Totals |
|---|---|---|---|
| Upper Group on Initial Achievement | 46 | 28 | 74 |
| Lower Group on Initial Achievement | 34 | 50 | 84 |
| Totals | 80 | 78 | 158 |

$X^2$= 6.48 df=1 P =.05

| Ineffective Thinking Scale | Below Median In. Th. Scale | Above Median In. Th. Scale | Totals |
|---|---|---|---|
| Upper Group on Initial Achievement | 45 | 29 | 74 |
| Lower Group on Initial Achievement | 37 | 47 | 84 |
| Totals | 82 | 76 | 158 |

$X^2$=3.63 df=1 P=.057

$X^2$=4.43 df=1 P=.05 *

| Effective Productivity Scale | Below Median Eff. Prod. Scale | Above Median Eff. Prod. Scale | Totals |
|---|---|---|---|
| Upper Group on Initial Achievement | 29 | 45 | 74 |
| Lower Group on Initial Achievement | 45 | 39 | 84 |
| Totals | 74 | 84 | 158 |

$X^2$=2.72 df=1 P=.10

$X^2$=3.27 df=1 P=.07 *

$X^2$ from 2x2 Contingency Tables with Yates' Correction unless otherwise indicated

* Without Yates'Correction.

Table 5 (Cont.)

| Gross Productivity | Lowest Quartile Gross Prod. | Upper Quartile Gross Prod. | Totals |
|---|---|---|---|
| Upper Group on Initial Achievement | 9 | 25 | 34 |
| Lower Group on Initial Achievement | 27 | 21 | 48 |
| Totals | 36 | 46 | 82 |

$X^2$=6.008 df=1 P=.05

**Relationships Between TAT-NPT Scales and Criterion Adjustment Group**

| Ineffective Thinking Scale: | Below Median In. Th. Scale | Above Median In. Th. Scale | Totals |
|---|---|---|---|
| Upper Criterion Group on Adjustment | 60 | 35 | 95 |
| Lower Criterion Group on Adjustment | 24 | 34 | 58 |
| Totals | 84 | 59 | 153 |

$X^2$ = 6.05 df=1 P= .05

## Table 6

### Evidence of Construct Validity of TAT-MPT Adjustment Levels

| | N | $r_t$ | r |
|---|---|---|---|
| 1. Relationship between Adjustment Levels and Nomination Groups Membership | 455 | .27 | |
| 2. Relationship between Adjustment Levels and Criterion Adjustment Group | 455 | .11 | |
| 3. Relationship between Adjustment Levels and Intitial Achievement Group | 455 | .16 | |
| 4. Relationship between Adjustment Levels and Progress in Achievement, One-Year | 455 | .09 | |
| 5. Relationship between Adjustment Levels and Sociometric Questions Ratings | 222 | | .19 |
| 6. Relationship between Adjustment Levels and Cooperative Research Project Interest Maturity Test | 247 | | .26 |

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V.

# THE CHICAGO COOPERATIVE RESEARCH PROJECT
# PRACTICAL READING TEST

## "EVERY DAY READING FOR FUN AND MEANING"

Directions for Administering and Scoring. Second Edition

Cooperative Research Project SAE 6529

BOARD OF EDUCATION
CITY OF CHICAGO
1961

# EVERY DAY READING

# FOR

# FUN AND MEANING

## DIRECTIONS FOR ADMINISTRATION AND SCORING

**Prepared in the Cooperative Research Project**

**by**

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**This publication was based on research performed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare**

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**Chicago, Illinois**

**Second Edition**
**1961**

# THE CHICAGO COOPERATIVE RESEARCH PROJECT PRACTICAL READING TEST

## "EVERY DAY READING FOR FUN AND MEANING:"

## DIRECTIONS FOR ADMINISTRATION AND SCORING.

Part V of a six-part report on a series of researches on

## HOW MENTALLY HANDICAPPED CHILDREN LEARN UNDER CLASSROOM CONDITIONS

carried on under the terms of Cooperative Research Project No. SAE 6529, dated February 28, 1957, between the United States of America acting through the United States Commissioner of Education of the Office of Education, Department of Health, Education, and Welfare, and the Department of Public Instruction of the State of Illinois, to provide research through the facilities of the Board of Education of the City of Chicago.

Part

I. Achievement and Adjustment of Educable Mentally Handicapped Children in Special Classes and in Regular Grades

II. Teaching the Educable Mentally Handicapped Child: A Comparison of Four Methods of Instruction

III. The Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children: Manual and Report

IV. Personality Appraisal of Educable Mentally Handicapped Children: A System for Scoring and Interpreting Picture Story Tests

V. The Chicago Cooperative Research Project Practical Reading Test "Every Day Reading for Fun and Meaning:" Directions for Administration and Scoring. Second Edition.

VI. Brief Screening Instruments for Evaluating the Academic Skills and Personal Adjustment of Educable Mentally Handicapped Children.

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# Everyday Reading for Fun and Meaning
# A Test of Practical Reading
# Manual of Directions
# Second Edition

## I. Purpose and Content

### Purpose

Everyday Reading for Fun and Meaning, the Chicago Cooperative Research Project Practical Reading Test is a test especially designed for the educable mentally handicapped (E.M.H.) child. It was constructed for the purpose of determining how well this child has been able to learn the particular type of reading which would be most important to his independent functioning in everyday life situations. The material in this test is presented not as a test, but as a challenging reading experience. Although the test is constructed primarily for use with the EMH children in both special classes and regular grades, it should also prove useful with the low-achieving child who is not educable mentally handicapped.

### Content

The selection of content of this test, its format, and the preparation of specific instructions for administering the test, were influenced by the authors' many years of of experience in teaching mentally handicapped children. Valuable contributions to the development of this test were made by a large number of persons: administrators, teachers of special classes and of regular grades, members of the 1957 Summer Workshop at the Chicago Teachers College, psychologists, adjustment teachers, social workers, and advisors and staff of the Cooperative Research Project.

## 2. Construction

The preliminary edition of the Practical Reading Test (P.R.T) contained 87 items in a single multilithed booklet. Most of the illustrations were in black and white; a few were in color. The difficulty level of the items in the preliminary form ranged from a pre-primary level through a level sufficient to provide a ceiling for advanced educable mentally handicapped children of 16 years of age, and with mental ages of at least eleven.

The preliminary edition of the Practical Reading Test was administered to a stratified sample of 198 educable mentally handicapped children, ages 7 to 16. The sample was stratified according to socio-economic community ratings, IQ, chronological age, and sex in proportions approximating the total EMH school population of Chicago as determined by a pilot study conducted during the summer of 1957. Eighty per cent of the try-out sample resided in community areas below average for the city of Chicago, approximately 50 per cent of the sample had IQ's below 70, the other 50 per cent had IQ's of 70 and above; approximately 50 per cent of the sample was 12 years of age and below and the other 50 per cent age 13 and above; and approximately 65 per cent of the sample were boys and 35 per cent were girls. Because of the wide range of the test, all items were not given to the entire sample. The pre-primary items at the beginning of the test were not administered to the older children and those with high mental ages, and the very difficult items at the upper level of the test were not administered to the very young and to the children with the very low mental ages.

Two types of item analysis were carried out on the preliminary edition of the Practical Reading Test,one, an item difficulty analysis, and, two, an internal consistency analysis. The item difficulty index used was percentage corrected for guessing. The sample was divided into three age groups: 7 to 9; 10 to 13; and 13 through 16. In the item difficulty analysis, the increase of per cents passing with age was inspected. A biserial *r* was used in determining internal consistency of the test. On the basis of these item analyses, the preliminary form of the test was revised. Items which were too difficult for the older subject and those with the highest MA's were modified or eliminated. Similarly, items too easy for the very young children with the lower MA's were also discarded or modified. Some very easy items were retained, however, for the purpose of providing a sufficiently low base for the test and for providing items which would be helpful in establishing rapport with very young or immature subjects. A number of difficult items were also retained in order to provide an adequate ceiling for the test. An analysis was also made of distractors to determine their effectiveness.

The revised edition of *Everyday Reading for Fun and Meaning* is organized on two levels, Primary (Book One) and Advanced (Book Two). Section One of Book One measures the ability to discriminate symbols, signs, words, and phrases, (pages 3 to 11). In each item, the pupil chooses one of three or four illustrations in response to oral instructions given by the examiner. The second section of Book One measures comprehension of words and phrases. After initial directions, the pupil works independently of the examiner. He looks at an illustration of an everyday life situation and selects a most appropriate word or phrase.

Book Two is divided into three sections. The first section measures comprehension of words and phrases, (pages 3 to 6). Section Two measures knowledge of symbols, signs, words and phrases, (pages 7 to 10). In each item, the pupil chooses one of four illustrations in response to oral instructions given by the examiner. The third section of Book Two measures the child's ability to follow printed instructions, to use sources such as the newspaper, TV guide, and telephone directory, and to fill out forms and applications. In both Book One and Book Two the filling out of identifying information on the front cover is part of the content of the test. Book One consists of forty-two items, and Book Two of thirty-two items. The test is printed in color.

Book One is intended for use with pupils in primary EMH classes, or with EMH pupils below 12 years of age. Book Two is intended for use with pupils in advanced EMH classes, or with EMH pupils above 12 years of age. Pupils in primary classes with reading achievement scores of 2.5 or above on standardized reading tests, however, should be given Book Two, and pupils in advanced classes with reading achievement scores below 2.5 on standardized reading tests should be given Book One.

In the Cooperative Research Project Matched-Pair Experiment, the primary form of the Practical Reading Test was given to children with average reading scores on the Stanford Achievement Test of 2.4 or below, and the advanced form was given to those with Stanford Achievement Reading Test scores of 2.5 or above. In methods experiments, the primary form of the test was given to the primary classes and the advanced form of the test to the advanced classes. In the main, the P.R.T. was administered individually to the children in the Matched-Pair Experiment, and to small groups of not more than 6 children each in the Methods Experiments.

The Primary Form of the revised Practical Reading Test was administered to 274 educable mentally handicapped children in the Cooperative Research Project Matched-Pair Experiment, and the Advanced Form was administered to 265 EMH children. Internal consistency analyses were carried out on comparisons of per cents of upper and lower criterion groups of 75 pupils each passing each item. The criterion groups constituted approximately 28 per cent of the sample of pupils taking the advanced form of the test and 27 per cent of those taking the primary form of the test. Of the 42 items in Book One, the point biserial r item test correlations of 35 items were above .25; for 28 of the items the point biserial r correlations were above .35; and for 16 items they were above .50. Only three item-scale point biserial correlations of the 31 items in Book Two were below.25; 24 of the correlations were .35 or higher, and 11 were .50 or above. As a result of these item analyses, no items of the revised editions of the Practical Reading Test were discarded, but the scoring criteria for one item of Book One and four items of Book Two were revised. The present edition of this manual provides the revised scoring criteria.

### 3. General Directions for Administration

In general, Book One should be used with pupils in the primary BGH classes, or with BGH pupils below twelve years of age. Book Two should be used, in general, with pupils in advanced BGH classes, or with BGH pupils above twelve years of age. Pupils in a primary class with reading achievement scores of 2.5 or above on a nationally standardized reading test, however, should be given Book Two, and pupils in advanced classes with reading achievement scores below 2.5 on a nationally standardized reading test should be given Book One.

Directions to the Examiner

1. The examiner should read the directions carefully before administering the tests.
2. Arrange the pupils so that they cannot copy.
3. Before starting the test, the examiner should see that all desks are cleared and that each pupil has a pencil and a test book. A supply of extra pencils should be available.
4. Maintain a natural classroom situation. (This is not to be just another test for the BGH pupil.)
5. Since the information at the bottom of the face sheet is a test item, the examiner should make sure that the child does not begin to fill in his name, etc., until instructions have been given.
6. No more than 6 pupils should be tested at one time.
7. What is considered ample time has been allowed for the administration of the test.
8. If all pupils have finished one part of the test before the allotted time, it is permissible to administer succeeding series of exercises.
9. There should be no interruptions during the test. (Unusual emergencies whould be taken care of at the discretion of the examiner.)

10. The examiner should be sure that the pupils understand what they are to do and how they are to mark their answers. With very immature pupils the examiner may wish to demonstrate how to make an "X". Since directions for one section of the tests are oral, the examiner should be on the alert for pupils with hearing defects. These pupils should be seated so that the good ear is toward the examiner.
11. The directions should be read verbatim, very slowly and very carefully. Whenever it is felt necessary, instructions may be repeated verbatim. The examiner may repeat oral instructions, whenever he feels that verbatim repetition is necessary to clarify a test item.
12. Children should be encouraged to choose an answer even if they are in doubt.
13. When the test has been started, the examiner should move about the room to see that instructions are being followed. If there is a pupil who is not following the directions, clarify for the individual, but do not disturb the class.
14. The examiner should make sure that the pupils turn the page when they are supposed to do so, and that they do not turn the pages marked "STOP", until they are given directions to proceed.
15. Examiners who prefer to use markers may supply pupils with them. Where the directions read "Put your finger on the next row," the pupil would be told, "Slide your marker under the next row of pictures."
16. Never start a test unless there is sufficient time for its completion.

### 4. Specific Directions for Administration of Book I (Primary Level)

To the Examiner: Do not read aloud the material in parentheses. Read the rest of the instructions verbatim. Whenever it is felt necessary, instructions may be repeated verbatim. The examiner may repeat oral instructions whenever he feels that verbatim repetition is necessary to clarify a test item.

---

I have a book. (Examiner shows one book) which has many pictures, signs and words that you see every day. You see some of them at home (Examiner point to the house), some at school (Examiner point to the school), and some in the neighborhood (Examiner point to the children on the corner). There are many interesting things to do in this book.

I am going to give each of you one of these books. Do not open the book until you are told to do so. I will also give you a pencil. Put the pencil on your desk. Do not pick it up until you are told to do so.
(Distribute the books first and then the pencils. Make sure that each child has a book and a pencil and is ready to begin.)

Examiner Note: Since the information at the bottom of the face sheet is a test item, the examiner does not give any help.
(Read:) Listen carefully. Now look at the bottom part of the cover. (Examiner point to the correct place.) You are to fill in all the lines that you can up to the long dash line. Do your best, but do not worry if you do not know how to fill in every line. When you have filled in as many lines as you can, you are to stop.

Remember, you are to stop at the long dark line. (Examiner demonstrate.) Are there any questions? (If there are no questions, the examiner says:) Take up your pencils. Begin.

(Allow 3 minutes)

At the end of three minutes say STOP. Pencils down.

(If it is obvious that the child cannot fill in at least his name, the examiner should place pupil's initials in the upper left hand corner.)

(The first section of the book has oral instructions for the test items on pages 3-11)

(Page 3) (Part I- Discrimination of signs, symbols and words, pages 3-11.)

(Read:) Open your book and fold it back like this. (Examiner demonstrate.)

We are going to work on page 3. (Examiner make sure that each child is on page 3.)

(Examiner should supervise closely the marking of each sample item. Take sufficient time to make sure that the pupils understand what to do.)

* * *

(Sample (Item-a) Put your finger by the first row of pictures. (If a marker is used say: Slide your marker under the first row of pictures.)

Let us look at the pictures. You see a cowboy , a boy wearing a patrol belt and a boy carrying a flag.

Put an X on the one who helps children cross the street.

You will put an X on.............(pause). Yes,on the patrol boy.

(Examiner point to the patrol boy.)

Now --- take your pencil and put an X on the patrol boy. (Examiner demonstrate how to make an X.)

* * *

(Sample (Item-b) Put your finger by the next row of pictures .

Listen carefully.

A car must never park in front of the place where firemen connect their hose.

Now let us look at the pictures. You see a fire burning, a water hose, a fire hydrant and a fireman with a hose.

Put an X on the place where firemen connect their hose.

You will put an X on........(pause), Yes, on the fire hydrant.

(Examiner point to the fire hydrant.)

* * *

(Sample Item -c) Put your finger on the last row. You will notice that in this row we have some words instead of pictures. You will mark a word.

Listen carefully.

(Read:) Mother went to a big store. She wanted to buy some bread. She saw many signs that told her where to find different things.

Look at the signs. They are:

BUTTER BROWN MEAT BREAD

Put an X on the sign that told mother where to get bread.

You will put an X on ............(pause). Yes, on the sign that says BREAD.

(Examiner point to the sign BREAD on your copy of the book.)

Pencils down.

Remember: You must listen carefully to what I tell you to do.

After you have listened carefully, look at each row of pictures or each row of words. Mark the one you are asked to mark. Do not hurry.

We are going to work together. If you are not sure of an answer, mark the one you think is right.

Are there any questions?

Turn to the next page. Fold your book back like this. (Examiner demonstrate.)

Be sure you are on page 4. (Examiner should point to the correct page on his copy of the book. Examiner make sure that each child is on page 4.)

(Read:) . Now pick up your pencil.(Pause.)

1. Put your finger by the first row of pictures.

(If a marker is being used say: Slide your marker under the first row of pictures.)

Listen carefully.

Here is some money.

Put an X on the dime.

* * *

(Read:) 2. Put your finger by the next row of pictures.

Listen carefully.

Mary wants to cross the street. The policeman wants Mary to wait until the cars have stopped.

Put an X on the picture that shows how the policeman tells Mary to WAIT.

* * *

(Read:) 3. Put your finger by the last row of pictures.

Listen carefully.

There is a fire in a building. The janitor is the only one in the building.

Put an X on what he will use to call the fire department.

* * *

Page 5) Now turn to page 5. (Examiner make sure that each child is on the correct page.)

* * *

(Read:) 4. Put your finger by the first row of pictures.

Listen carefully.

You have a letter that is ready to be mailed.

Put an X on the picture that shows where you can mail a letter.

* * *

(Read:) 5. Put your finger by the next row of pictures.

Listen carefully.

Here are some arrows.

Put an I on the arrow that tells you to go DOWN.

* * *

(Read:) 6. Put your finger by the last row of pictures.

Listen carefully.

John was at a friend's house. On his way home he stopped at a public telephone to call his mother.

Put an I on the picture that shows where he will go to call her.

* * *

(Page 6) (Read:) Turn to the next page. Fold your book back like this.

(Examiner demonstrate.)

Be sure you are on page 6. (Examiner should point to the correct page on his copy of the book. Examiner make sure that each child is on page 6.)

* * *

(Read:) 7. Put your finger by the first row of pictures.

Listen carefully.

Here are some traffic lights.

Put an I on the traffic light that tells you to STOP.

* * *

(Read:) 8. Put your finger by the next row of pictures.

Listen carefully.

Mother gave baby half of a glass of juice.

Put an I on the glass that is half full.

* * *

9

(Read:) 9. Put your finger by the next row of pictures.

Listen carefully.

There will be a story about rockets on television. It will be on channel eleven.

Put an X on the dial that is set for Channel 11 (eleven).

* * *

(Read:)10. Put your finger by the last row of pictures.

Listen carefully.

Jane has a letter that is ready to be put in the mailbox.

Put an X on the letter that is ready to be mailed.

* * *

Now turn to page 7. (Examiner make sure that each child is on page 7.)

* * *

(Page 7)
(Read:)11. Put your finger by the row of arrows.

Listen carefully.

The arrows tell you which way to go.

Put an X on the arrow that tells you to turn right.

* * *

(Read:)12. Put your finger by the next row of pictures.

Listen carefully.

Here are some traffic lights.

Put an X on the traffic light that tells you to GO across the street.

* * *

(Read:)13. Put your finger by the last row of pictures.

Listen carefully.

The alarm clock will ring at 7:30.

Put an X on the clock which shows 7:30.

* * *

Turn to the next page. Fold your book back like this. (Examiner demonstrate.)

Now we are going to work on page 8.

Be sure you are on page 8. (Examiner point to the correct page on your copy of the book.)

(Read:)14. Put your finger by the first row of signs.

Listen carefully.

Father was driving the car. He saw a sign that told him to stop.

Put an X on the sign that told father to STOP.

(Read:)15. Put your finger by the row of doors.

Listen carefully.

Bob took a message to Room 122 (one twenty two).

Put an X on the door that says 122 (one twenty two).

(Read:)16. Put your finger on the next row of signs.

Listen carefully.

Sue could not open the door when she pushed it. Then she read the sign that said PULL.

Put an X on the sign that says, PULL.

(Read:)17. Put your finger by the last row of signs.

Listen carefully.

Dick was at the show. He wanted to go out. He looked for a sign.

Put an X on the sign that means to go out.

Now turn to Page 9. (Examiner make sure that each child is on page 9.)

(Page 9)

(Read) 18. Put your finger by the first row of signs.

Listen carefully.

Some signs tell us to be careful so we will not get hurt.

Put an X on the sign that tells people to be careful so they will not get hurt.

(Read:) 19. Put your finger by the next row of signs.

Listen carefully.

Bill and John saw a sign on the gate. It told them not to go in.

Put an X on the sign that told Bill and John not to go in.

(Read:) 20. Put your finger by the next row of signs.

Listen carefully.

Mr. Smith wanted to ride the bus downtown.

Put an X on the sign that tells him where to stand to get the bus.

(Read:) 21. Put your finger by the last row of signs.

Listen carefully.

Father saw a sign in the store.

He put out his cigarette.

Put an X on the sign that told father to put out his cigarette.

(Page 10) Turn to the next page. Fold your book back like this. (Examiner demonstrate.)

Now we are going to work on page 10.

Be sure you are on page 10. (Examiner point to the correct page on your copy of the book.)

(Reads) 22. Put your finger by the first row of pictures.

Listen carefully.

Here are four cans on a shelf. One can should not be there. It has something in it that you must NEVER put in your mouth.

Put an X on the can that holds something that you must NEVER put in your mouth.

*————————————*

(Reads) 23. Put your finger by the next row of signs.

Listen carefully.

Mother bought some tooth paste on sale.

She bought two tubes for 75¢

Put an X on the sign that shows how much the tooth paste cost.

*————————————*

(Reads) 24. Put your finger by the next row of pictures.

Listen carefully.

Tom wanted to wash his hands.

Put an X on the door which told Tom where to go to wash his hands.

*————————————*

(Reads) 25. Put your finger on the last row of pictures.

Listen carefully.

Jane's birthday comes in June.

Put an X on the calendar that shows the month for Jane's birthday.

*————————————*

Now turn to page 11. (Examiner make sure that each child is on page 11.)

(Page 11)
(Reads) 26. Put your finger by the first row of signs.

Listen carefully.

Mrs. Jones went shopping in a big food store. She wanted to buy some oranges and bananas.

Put an X on the sign that tells Mrs. Jones where to look for oranges and bananas.

(Reads:)27. Put your finger by the next row of signs.

Listen carefully.

A special train to New York leaves exactly at noon.

Put an X on the time the train leaves.

* * *

(Reads:)28. Put your finger by the next row of pictures.

Listen carefully.

The Jones family is planning a picnic.

They want to know if it will rain.

Put an X where they can look to find out if they can go on a picnic.

* * *

(Reads:)29. Put your finger by the last row of signs.

Listen carefully.

Here are some street signs.

Put an X on the sign that says NORTH MAY St.

* * *

Pencils down. STOP

(Page 12) (Part 2 - Recognition of words and phrases, Page 12-16)

Now turn to the next page. Fold your book like this (Examiner demonstrate.) We are going to read page 12. (Examiner should point to the correct page on his copy of the book. Since these are sample items, the examiner should supervise closely the marking of each sample item. Take sufficient time to make sure the pupils know what to do.)

* *

I will read the directions at the top of the page. Then say:

* *

eads) Look at the pictures. Then look at the words.

ample Put an X on the word or words that best tell about the picture.
tem a)

Now, look at the first picture. It is a picture of some boys.

Put your finger by the big words that go with the first picture.

(Examiner demonstrate.)

Let us read the words under the picture.

They are:

TOYS BAGS BOYS GIRLS

What word tells you about the picture?

(Pause)-------------------Yes, the right word is BOYS.

Remember you are to:

Look at the pictures. Then look at the words.

Put an X on the word or words that best tell about the picture.

Now pick up your pencil and put an X on the word BOYS.

(Examiner make it clear to the child that the X is placed on the word or words not between the boxes.)

* *

(Read:) (Sample Item-b) Now look at the next picture. It is a picture of a dog.

Put your finger by the big words at the side of the picture.

Now read the words beside the picture. They are:

TWO DOGS BAD BOY ONE BOY BAD DOG

Which word tells us about the picture?

(Pause)--------Yes, the right words are BAD DOG.

Put an X on the words BAD DOG. (Examiner check each child's work.)

---

Now you are going to read to the end of the book all by yourself.

Remember: Look at the picture. Then look at the word or words in each box. You will put an X on the one that best tells about the picture. Do not stop until you come to the end of the book at the bottom of page 16. (Examiner demonstrate.) If you are not sure of an answer, mark the one you think is the right answer. Are there any questions?

Turn to page 13. You may begin. (Examiner see that the pupils do not stop until they have come to the end of the test. If it is obvious that the child cannot do the work and chooses to stop, it is permissible for him to do so.)

Allow 10 minutes.

At the end of ten minutes say "STOP."

Pencils down.

5. Specific Directions for Administration of Book II (Advanced Level)

**To the Examiner:** Do not read aloud the material in parentheses. Read the rest of the instructions verbatim. The examiner may repeat oral instructions whenever he feels that verbatim repetition is necessary to clarify a test item.

*______________________________*

I have a book which contains many signs, pictures and words that you see everyday. You see some of them at home, some at school and some in your neighborhood. There are many interesting things to do in this book.

I am going to give each of you one of these books. Do not open the book until you are told to do so. I will also give you a pencil. Put the pencil on your desk. Do not pick it up until you are told to do so. If you break a pencil after we begin, raise your hand and I will give you another one.

(Distribute the books first and then the pencils. Make sure that each child has a book and a pencil and is ready to begin.)

*______________________________*

**Examiner Note:** Since the information at the bottom of the face sheet is a test item, the examiner does not help the child fill in the information. If it is obvious that the pupil cannot fill in at least his name, the examiner should place the pupil's initials in the upper left hand corner of the cover.

Now let us look at the cover page. The name of the book is: (Examiner point to the title of the book.)

*______________________________*

## ARE YOU WIDE AWAKE?

* *

(Read:) Now let us look at the pictures on this page.

(Examiner point to the picture of the elevator.)

What is this? Yes, it is an elevator.

Why are the people looking up?

Yes, they are looking to see if the elevator is going up or down.

* *

(Examiner point to the traffic light.)

What is this? Yes, it is a traffic light.

(Examiner point to the railroad signal.)

Where have you seen something like this? Yes, of course, you have seen this at a railroad crossing.

* *

First we will look at the bottom part of the front page. (Examiner point to the correct place.) You are to fill in all the lines until you come to the two long dark lines. Do the best you can but do not worry if you do not know how to fill in every line.

When you have filled out as many lines as you can, you are to stop.

Remember: You are to stop when you get to the two long dark lines.

(Examiner demonstrate.)

Are there any questions? (If there are no questions, the examiner says:)

Pick up your pencil.

Begin (Allow 3 minutes.)

(At end of 3 minutes say) STOP.

Pencils down.

How many signs, pictures, words and other interesting things have you noticed in your home, your school and your neighborhood? Let us find out, shall we?

(Part I - Recognition of words and phrases, pages 3-6

(Page 3)
(Read:) Turn to the next page and fold your book back like this.

(Examiner demonstrate.) We are going to work on page 3. (Examiner make sure that each child is on page 3.)

(Since these are sample items the examiner should supervise closely the marking of each sample item. Take sufficient time to make sure the pupils know what they are to do.)

* * *

Now let us read the directions at the top of the page. (Examiner point to the correct place.) Then say:

Look at the pictures. Then look at the words.

Put an X on the word or words that best tell about the picture.

Sample Item-a
(Read:) Look at the first picture. It is a picture of some boys.

Now look at the words under the picture. They are:

TOYS BAGS BOYS GIRLS

What word tells you about the picture?

(Pause)———. Yes, the right word is BOYS.

Remember: Look at the picture. Then look at the words.

Put an X on the word or words that best tell about the picture.

Now pick up your pencil and put an X on the word BOYS.

(Examiner make it clear to the child that the X is placed on the word or words, not between the boxes.)

* * *

Sample Item-b
(Read:) Look at the next picture. It is a picture of a dog. Look at the words beside the picture. They are:

TWO DOGS BAD BOY ONE BOY BAD DOG

Which words tell us about the picture?

(Pause)———. Yes, the right words are BAD DOG.

Put an X on the words BAD DOG. (Examiner check each child's work.)

Now we are going to read to the bottom of page 6. When you come to the word STOP at the bottom of page 6, put your pencils down.

Remember: Look at the picture. Then look at the word or words that are under the picture or at the side of the picture.

Put an X on the word or words that best tell about the picture.

If you are not sure of a word, mark the one you think is the right answer.

Are there any questions? (If there are no questions say:)

Turn to page 4. Read page 4, page 5, and page 6. STOP at the bottom of page 6.

Begin.

(Examiner make sure that no child stops before he comes to the bottom of page 6, unless it is obvious that he cannot read the material. Examiner also make sure that no child works beyond page 6.)

(Allow 8 minutes.)

(At the end of 8 minutes say, "STOP!")

Pencils down.

* ______________ *

(Page 7) (Part II- Recognition and understanding of signs, symbols and words, pages 7-10.)

(Read:) (This section has oral instructions for all items. Since items a and b are sample items, the examiner should supervise closely the marking of each item. Take sufficient time to make sure the pupils know what they are to do.)

* ______________ *

Turn to the next page. (Examiner demonstrate.) We are going to work on page 7. (Examiner point to the correct page on his copy of the book.)

* ______________ *

Now you will have to listen carefully to what I tell you to do. This time I will read the directions.

(Page 7)

(Sample Item-a) Look at the first row of pictures.

Listen carefully.

Mother is cooking. She needs some hot water right away.

Now let us look at the pictures. There is a picture of a drinking fountain, a faucet marked H, a faucet marked C and a frying pan on the stove.

Put an X on the picture that shows where mother can get hot water right away.

Where will you put the X?

(Pause)--------Yes, on the second picture because it shows a faucet with H for hot water.

Pick up your pencils and mark the faucet with "H" on it.

(Examiner point to picture.)

* * *

Sample Item-b Now look at the next row. You will notice that in this row we have some words instead of pictures. You will mark a word.

Listen carefully.

Mother went to a big store. She wanted to buy some bread. She saw many signs that told her where to find different things.

Let us read the signs. They are:

BUTTER BROWN MEAT BREAD

Put an X on the sign that told mother where to get BREAD .

Where will you put the X?

(Pause)--------Yes, on the sign that says BREAD.

(Examiner point to the correct sign in his copy of the book.)

Are there any questions?

(No more than fifteen seconds should be allowed for pupils to complete a test item after instructions have been given.)

(Test item 10 begins at the bottom of page 7.)

(Read:) 10. Look at the row of traffic lights.

Listen carefully.

Jack was on a bycicle. He wanted to go across the street.

Put an X on the traffic light that tells Jack to GO.

* * *

(Page 8) Turn to the next page. Fold your book back like this. (Examiner should make sure that each child is on page 8.)

(Read:) 11. Look at the row of arrows.

Listen carefully.

Arrows tell you which way to go.

Put an X on the arrow that tells you to turn RIGHT.

* * *

(Read:) 12. Look at the next row.

Listen carefully.

Here are some coins.

Put an X on the half dollar.

* * *

(Read: 13. Look at the last row.

Listen carefully.

The alarm will ring at 7:30.

Put an X on the clock that shows 7:30.

* * *

(Page 9) Turn to page 9. (Examiner point to the page on his copy of the book and make sure that each child is on the correct page.)

* * *

ad:) 14. Look at the first row of signs.

Listen carefully.

Sue could not open the door when she pushed it. Then she read the sign that said PULL.

Put an X on the sign that says PULL.

ad: 15. Look at the next row of signs.

Listen carefully.

Mary wanted to go in the door.

Put an X on the sign that tells her to go in.

ad:) 16. Look at the next row of signs. (Examiner make sure that each child is on the third row.)

Listen carefully.

Bill and John were walking down the street. They saw a sign on a gate. It told them not to go in.

Put an X on the sign that told Bill and John not to go in.

ead:) 17. Look at the last row of signs.

Listen carefully.

Bob saw signs on some doors in a large building. One sign told him to be careful so he would not get hurt.

Put an X on the sign that told Bob to be careful so he would not get hurt.

Page 10) Turn to the next page. Fold your book back like this. (Examiner demonstrate.) Now we are going to work on page 10. (Examiner point to the correct page on his copy of the book and make sure that each child is on page 10.)

(Read:)18. Look at the first row.

Listen carefully.

Here are four labels you may see on cans. One label tells about something that you must NEVER put in your mouth.

Put an X on the label that tells about something you must NEVER put in your mouth.

* * *

(Read:)19. Look at the next row.

Listen carefully.

The policeman told father to stop his car. The policeman said, "This is a twenty-five mile zone. You were speeding at thirty-five miles per hour."

Put an X on the traffic sign that father did not obey.

* * *

(Read:)20. Look at the next group of signs. (Examiner point to the correct place in his book.

Listen carefully.

Mother was reading the directions on a can of cleaning fluid.

She told Sally not to hold the cleaning fluid near the stove.

Put an X on the words that mother read.

* * *

(Read:) 21. Look at the last group of signs.

Listen carefully.

The front of the bus was very crowded. There was room in the back of the bus.

Put an X on the sign that the bus driver wanted the people to read and obey.

STOP

Pencils down. Turn to the next page. (Examiner demonstrate.) Now we are going to work on page 11.

**Part III.- Measures ability to follow printed instructions.**

(Page 11)

(Reads:) We will read the directions for the first sample. They say:

(Sample Item a) Father was driving a car. Suddenly he came to the end of a street. He had to turn around and go back.

Put an X on the sign that father saw.

Now look at the signs. They are:

| | | | |
|---|---|---|---|
| STOP<br>CAR | BUS<br>STOP | DEEP<br>END | DEAD<br>END |

What sign told father that he would have to turn around and go back?

(Pause)---------Yes, the right sign is DEAD END. (Examiner demonstrate.)

Now take your pencil and put an X on the sign DEAD END.

* *

(Reads) Look at the next picture. It is a SALE paper.

(Sample Item b) (Examiner point to the SALE paper.) We will read the directions for the second sample. They say: Bob looked at the sale paper. He had only 20¢.

Put an X on what Bob could buy. Let us read the SALE paper.

| | | |
|---|---|---|
| SOAP | 2 bars | 33¢ |
| ICE CREAM | 1 pt. | 25¢ |
| BANANAS | 2 lbs. | 20¢ |
| ORANGES | 2 doz. | 70¢ |

We will put an X on------(Pause). Yes, on bananas because that is the only thing Bob could buy for twenty cents. (Examiner point to the word bananas on his copy of the book and make sure that each child has marked his sample item correctly. If the child marks 2 lbs. or 20¢, it is incorrect. He must follow directions exactly.)

Now you are going to read all by yourself. Do not stop until you come to the end of the book. (Examiner calls attention to continuous reading on the part of the pupils from the bottom of page 11 to the bottom of page 16.)

Remember: Read the directions and do as you are told.

If you are not sure of an answer mark the one you think is correct.

Are there any questions? (If there are no questions the examiner says:)

Begin. (Examiner should circulate around the room to make sure the child continues to read to the end of the book unless it is obvious he cannot do the reading.)

* *

At the end of 20 minutes say "STOP".

* *

Pencils down.

* *

Collect the books.

## 6. General Directions for Scoring

The scoring sheet or key should be placed beside the corresponding page of the test booklet. The pupil's responses should be noted by marking correct answers C, incorrect answers X, and omitted answers O.

Sample items are indicated by lower case letters a, b, or c and the answer should hot be scored. If more than one item is marked in each row, the answer is scored wrong unless more than one item is specifically called for. The score for each sub-test or section is the number of correct answers, corrected for guessing. The highest possible score on each section is as follows:

| BOOK ONE<br>SECTION | NUMBER OF ITEMS |
|---|---|
| I | 29 |
| II | 12 |
| Cover | 1 |
| Total | 42 |

| BOOK TWO<br>SECTION | NUMBER OF ITEMS |
|---|---|
| I | 9 |
| II | 12 |
| III | 10 |
| Cover | 1 |
| Total | 32 |

## READING FOR FUN AND MEANING — BOOK ONE
## VI SCORING KEY

**Page 3**

**SAMPLE**

(Do not include in scoring)

middle picture

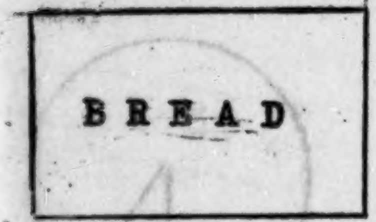
(patrol boy)

(Do not include in scoring)

third picture

(fire hydrant)

(Do not include in scoring)



**Page 4**

middle picture

(dime)

1

last picture

(policeman with raised hand)

2

first picture

(an indoor fire alarm box)

3

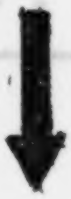
**Page 5**

middle picture

(public mailbox)

4

last picture



5

middle picture

(public telephone booth)

6

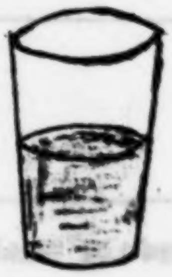
**Page 6**

first picture

(red traffic light)

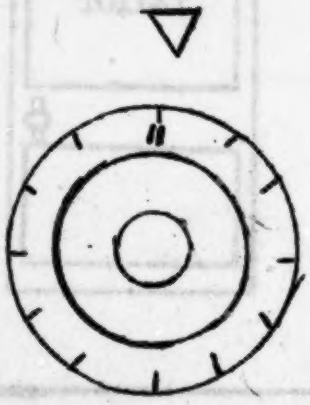
7

first picture



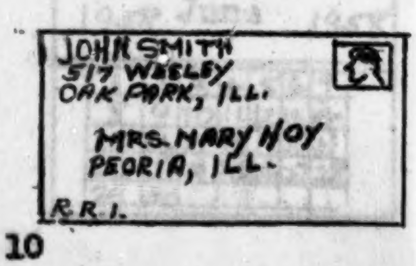
8

middle picture



9

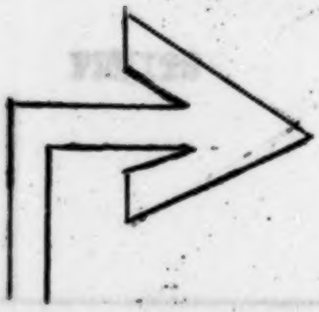
last picture


JOHN SMITH
517 WESLEY
OAK PARK, ILL.
MRS. MARY HOY
PEORIA, ILL.
R.R. 1.

10

**Page 7**

**second arrow**



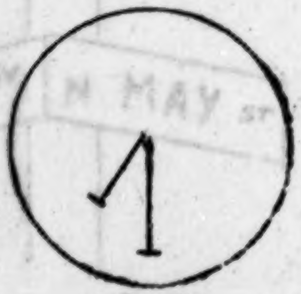
11

**last picture**

**green traffic light)**

12

**third clock**

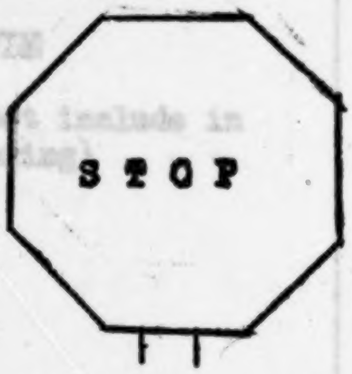


**7:30**

13

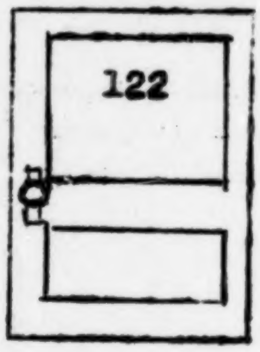
**Page 8**

**third picture**



14

**second picture**



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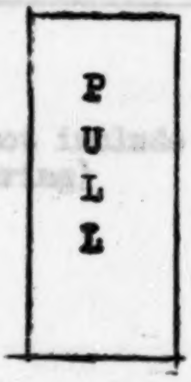
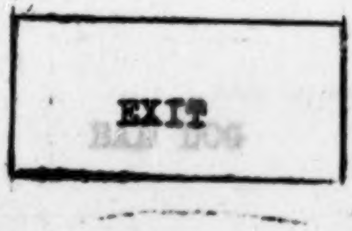


16



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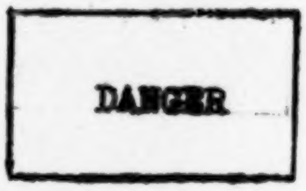
**Page 9**



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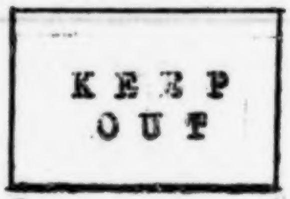

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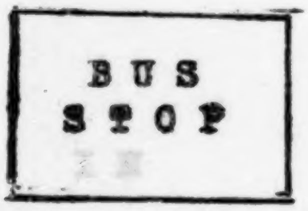

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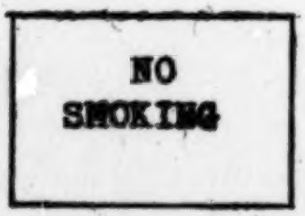
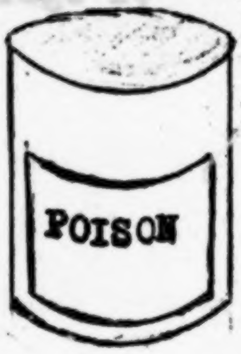


21

**Page 10**

**second picture**



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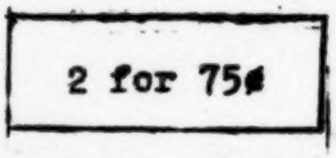
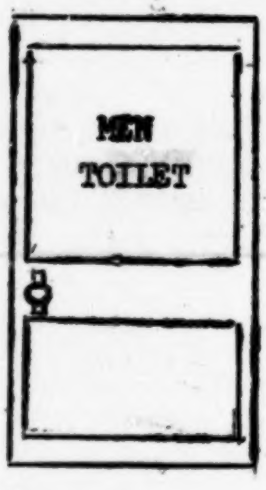


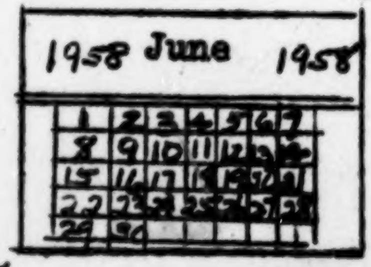
23

**last picture**



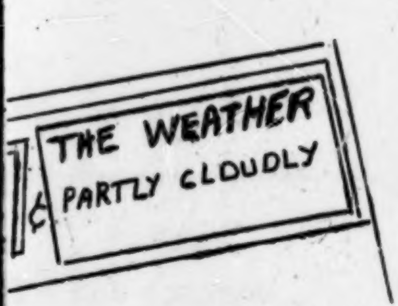
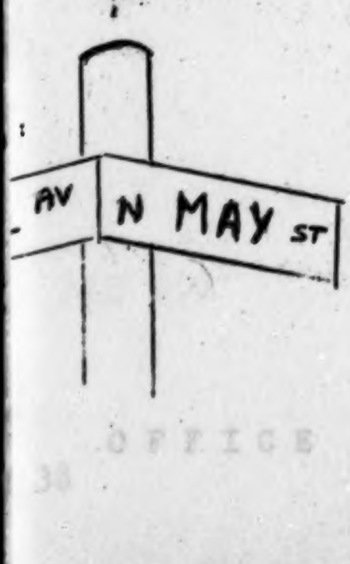
24

**second picture**


1958 June 1958

25

## SCORING KEY BOOK ONE

| Page 11 | Page 12 | Page 13 | Page 14 |
|---|---|---|---|
| FRUITS<br>12:00 | SAMPLE<br>(Do not include in scoring)<br>BOYS<br>a. | 30 UP | 33 Mr. |
| first picture<br> THE WEATHER<br>PARTLY CLOUDLY | (Do not include in scoring) | 31 IN | 34 DOWN |
| third picture<br> | BAD DOG<br>b. | 32 HOT | 35 GIRLS |

Reading for Fun and Meaning

| Page 15 | Page 16 | Face Sheet |
|---|---|---|
| 36 PUSH | 39 WET PAINT | (Identifying Information)<br>All spaces must be filled in completely and correctly with the exception of the school.<br>Abbreviations need not be followed by a period. |
| 37 STAIRS | 40 RAILROAD CROSSING | Birthday- Month and date<br>Name- First and last<br>Date- Month, date and year<br>Incorrect if proper nouns clearly begin with small letters. |
| 38 OFFICE | 41 MEN WORKING | 42 |

## READING FOR FUN AND MEANING BOOK TWO

## SCORING KEY

| Page 3 | Page 4 | Page 5 | Page 6 |
|---|---|---|---|
| SAMPLE<br>(Do not include in scoring)<br>B O Y S | 1 Mr. | 4 NAME | 7 ONE WAY |
| | 2 DOWN | 5 DOZEN | 8 FIRST AID |
| SAMPLE<br>(Do not include in scoring)<br>BAD DOG | 3 G I R L S | 6 CASHIER | 9 INFORMATION |

**Page 7**

SAMPLE
(Do not include
in scoring)

second picture

(FAUCET WITH H)

SAMPLE
(Do not include
in scoring)

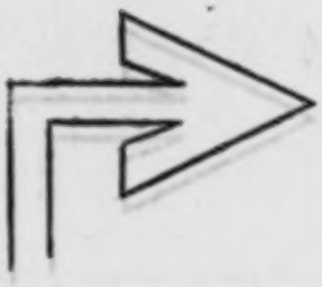
B R E A D

last picture

green traffic light)

**Page 8**

second picture



11

last picture

(HALF DOLLAR)

12

third clock

(7:30)

13

**Page 9**

P
U
L
L

14

E N T E R

15

KEEP OUT

16

D A N G E R

17

**Page 7**

SAMPLE
(Do not include
in scoring)

second picture

(FAUCET WITH
H )

SAMPLE
(Do not include
in scoring)

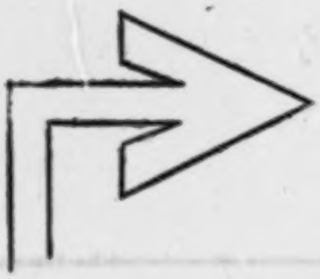
BREAD

last picture

green traffic light)

**Page 8**

second picture



11

last picture

(HALF DOLLAR )

12

third clock

(7:30)

13

**Page 9**

P
U
L
L

14

ENTER

15

KEEP OUT

16

DANGER_

17

Page 10

POISON

SPEED LIMIT
25 MILES

KEEP AWAY FROM FIRE

MOVE TO THE REAR OF THE BUS

1

Page 11

SAMPLE

(Do not include in scoring)

DEAD
END

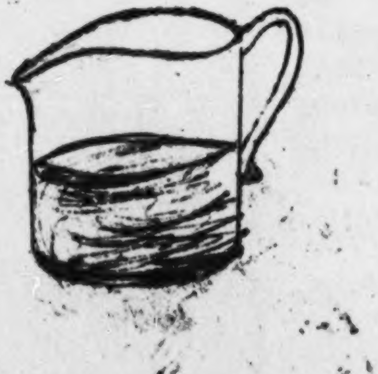
a.

(Do not include in scoring)

BANANAS

b.

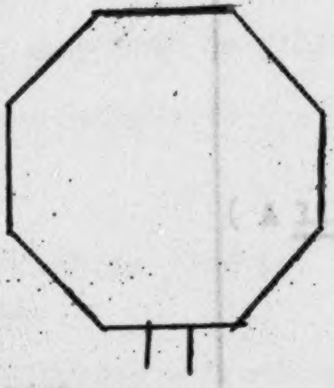
first picture



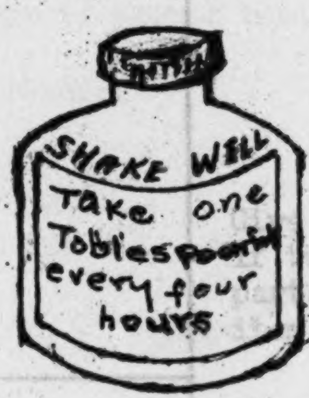
22

**Page 12**

**second picture**



**fourth bottle**


SHAKE WELL
Take one Tablespoonful every four hours

**DUE on or before March 15, 1956**

**Page 13**

**6:00 P.M.**

**5 (Channel)**

**26**

---

Page 14

Line under the telephone number)

[illegible] 4-3681

HELP WANTED MEN

28

Page 15

( A line under any two [2])

north

east

west

27

Give one (1) score if two out of three parts of the total item are correct

Coding note:

If child uses X instead of a line under the correct answer both an X and a 9 are used in scoring and coding to indicate that subject knew the right answer but failed to follow instructions in marking it.

29

Page 16

All spaces must be filled in correctly and completely

Abbreviations need not be followed by a period.

Incorrect if proper nouns clearly begin with small letters.

May omit telephone number

30

Instructions are the same as above.

Score 1: All parts correct either with cursive, with manuscript, or with cursive and printed signature.

Score 2: All parts correctly printed with signature in cursive.

Eliminate telephone number.
May have no period after abbreviations.
Incorrect if proper nouns clearly begin with small letters

31 (Over)

Page 14

(Line under the telephone number)

UNion 4-3621

27

HELP WANTED
MEN

28

Page 15

( A line under any two [2])

north

east

west

Give one (1) score if two out of three parts of the total item are correct

Coding Note:

If child uses X instead of a line under the correct answer both an X and a 9 are used in scoring and coding to indicate that subject knew the right answer but failed to follow instructions in marking it.

29

Page 16

All spaces must be filled in correctly and completely

Abbreviations need not be followed by a period.

Incorrect if proper nouns clearly begin with small letters.

May omit telephone number

30

Instructions are the same as above.

Score 1: All parts correct either with cursive, with manuscript, or with cursive and printed signature.

Score 2: All parts correctly printed with signature in cursive.

Eliminate telephone number.
May have no period after abbreviations.
Incorrect if proper nouns clearly begin with small letters

31

(Over)

**Face Sheet**

**(Identifying information)**

**All spaces must be filled in completely and correctly with the exception of the school.**

**Abbreviations need not be followed by a period.**

**Birthday - Month and date**
**Name - First and last**
**Date - Month, date and year**

**Incorrect if proper nouns clearly begin with small letters.**

## 7. Reliability and Validity [1]

In outlining a validation study of the Practical Reading Test, it was hypothesized that both levels of the PRT would be related to mental age and chronological age to a moderate degree; that there would also be a moderate relationship between the advanced level of the test and average reading; and that the primary level would be related to average reading and to the Word Recognition Test to a low degree. Our findings are summarized in Table 1. Moderately high to high relationships were found between both levels of the Practical Reading Test and Average Reading on the Stanford Reading Test, and between the primary level of the P.R.T. and the Word Recognition Test. The relationship between thePractical Reading Test and MA was low, and between the Practical Reading Test and CA very low, but significant.

The Kuder-Richardson Formula 20 reliability coefficient of Book One was .81, and of Book Two .75.

---

[1] Acknowledgement is made of the participation of William Itkin, Irving Brauer and Berthold Demsch in the reliability and validity study of the P.R.T.

## Table 1

### Construct Validation of the Cooperative Research Project Practical Reading Test

| Criterion | Hypothesized Relationships | Level of Practical Reading Test | Data | N | Significance Test r | Significance Test R |
|---|---|---|---|---|---|---|
| Average Reading, Stanford Achievement Test | Low positive Correlation | Primary | Methods Experiments | 190 | .78 | |
| | | | (Cases with MA of 6.0+ only) | 167 | .77 | |
| | Moderate positive Correlation | Advanced | Methods Experiments | 292 | .77 | |
| Mental Age | Moderate positive Correlation | Primary | Methods Experiments | 190 | .57 | |
| | | | (Cases with MA of 6.0+ only) | 167 | .46 | |
| | Moderate positive Correlation | Advanced | Methods Experiments | 292 | .44 | |
| Chronological Age | Moderate positive Correlation | Primary | Methods Experiments | 190 | .34 | |
| | Moderate positive Correlation | Advanced | Methods Experiments | 294 | .24 | |
| MA + Stanford Reading | Moderate positive Multiple Correlation | Primary | Methods Experiments | 167 | | .78 |
| | | Advanced | | 292 | | .79 |
| Cooperative Research Project Word Recognition Test | Low positive Correlation | Primary | Methods Experiments | 172 | .73 | |
| Chicago Test of General Information and General Comprehension (Ethical Comprehension Test not included in total score) | Moderate positive Correlation | Primary | Methods Experiments | 269 | .65 | |
| | | Advanced | | 258 | .58 | |

## 8. Summary

The Chicago Cooperative Research Practical Reading Test was constructed for the purpose of determining how well the educable mentally handicapped child has been able to learn the particular type of reading which is most important to his independent functioning in everyday life situations. The test is organized into two levels, Primary and Advanced. At lower levels, test items measure ability to discriminate symbols, signs, words, and phrases. Upper levels of the test measure ability to follow printed instructions, to use materials such as TV guides, and telephone directories, and to fill out forms and applications.

The construction, validity, and reliability of the Practical Reading Test are described in this paper. The Kuder-Richardson Formula 20 reliability of Book One was .81, and of Book Two .75. Correlations between the P.R.T. and the Cooperative Research Project Word Recognition Test and the Stanford Reading Test ranged between .73 and .78. The correlation between the P.R.T. and the Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children was .65. Correlations between the P.R.T. and mental age ranged from .44 to .57. Correlations with chronological age were very low, but significant, .34 and .24 for the Primary and Advanced levels of the test, respectively.

The magnitude of the correlations obtained between the P.R.T. and Average Reading on the Stanford, between the P.R.T. and the Word Recognition Test, and between the Chicago Test of General Information and General Comprehension (GICT) and the P.R.T. were higher than hypothesized. The presence of word recognition items in the P.R.T. help to account for high correlations with the Word Recognition Test and with Stanford Reading, but there are also many performance type items in the P.R.T. which do not involve reading. One interpretation of these findings which appears plausible and which has also been suggested by high intercorrelations among subtests of the GICT, is that EMH children who are achievers tend to achieve with remarkable consistency in different curricular areas. Mental age, motivation, and general adjustment may underly their achievement in the different areas of learning.

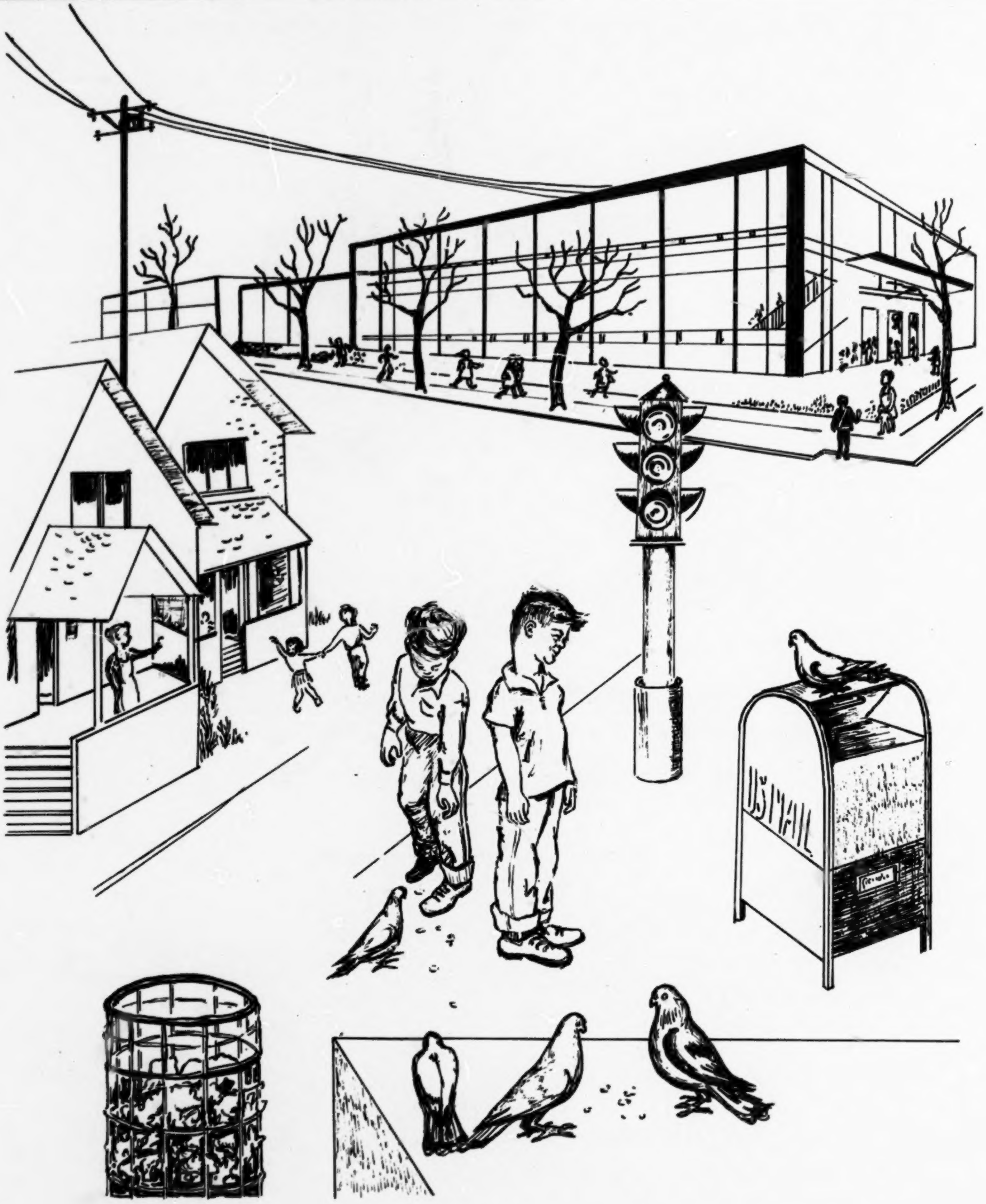
## Suggested Uses of the Practical Reading Test

The authors believe that experience with the Practical Resding Test in the Chicago Cooperative Research Project experiments and the validation and reliability data reported in this paper justify the following uses of the Practical Reading Test:

1. In evaluating the achievement of pupils in practical reading
2. In comparing the progress of individual E.M.H. pupils in special classes with those in regular grades
3. In comparing the progress of E.M.H. pupils in classes participating in a study of the relative effectiveness of various methods of teaching reading.

The authors also believe that the results of the test should have a more general use:

1. In motivating pupils to an awareness of the importance of reading in meeting the situations and problems of everyday living
2. In encouraging teachers to provide more and better planned experiences which promote pupil growth in this type of reading
3. In counseling low and high achievers in regard to post-school adjustment
4. In serving as a "morale booster" to pupils who, for various reasons, are unable to make satisfactory progress in the conventional type reading but who are high achievers in practical reading.



**Birthday**________________ **Boy or Girl**________________

**Age**__________ **Name**________________________

**Date**________________ **School**________________

I________________ II________________ Total________________

# EVERY DAY READING
# FOR
# FUN AND MEANING

## BOOK ONE

Prepared in the Cooperative Research Project

by

**Willie Hicks Scarborough**

and

**Mary M. Cummings**

Geraldine McCullough, Illustrator

William Itkin
Director
Cooperative Research Project

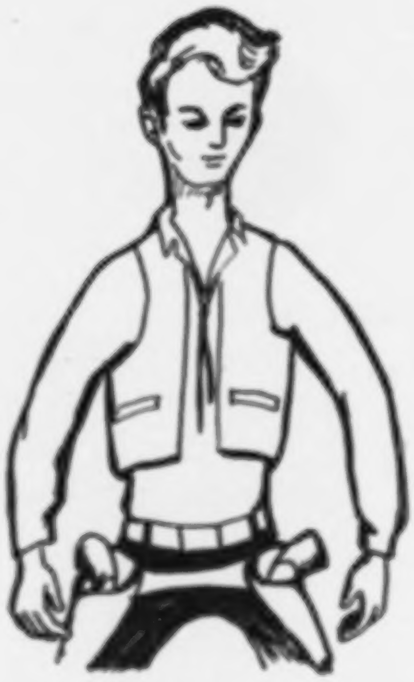
Frances A. Mullen
Assistant Superintendent
of Schools in Charge
of Special Education

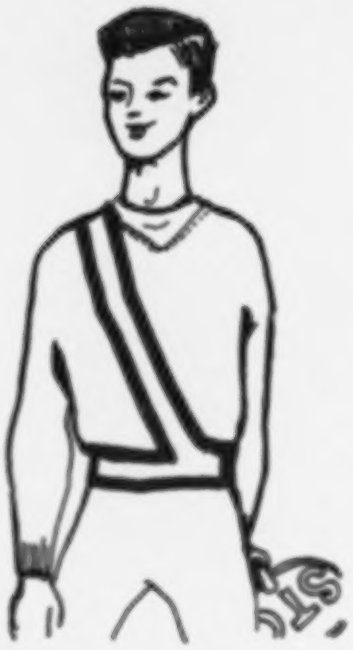
Benjamin C. Willis
General Superintendent of Schools

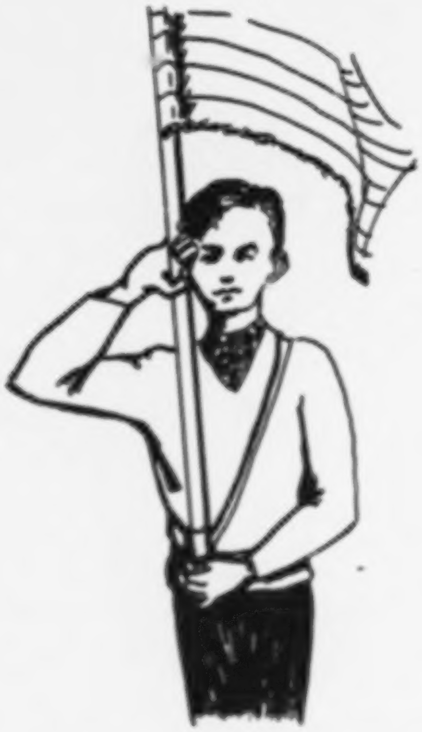
This publication was based on research performed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare.

Copyright 1958
Board of Education
Chicago, Illinois

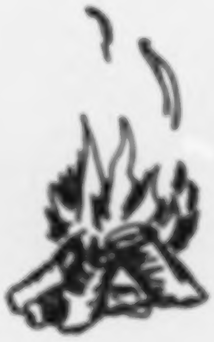
## SAMPLE

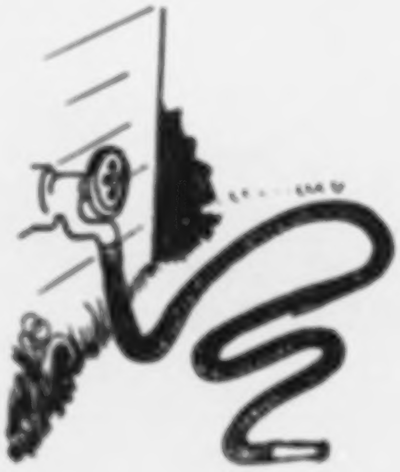


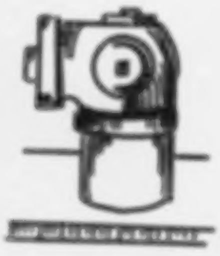


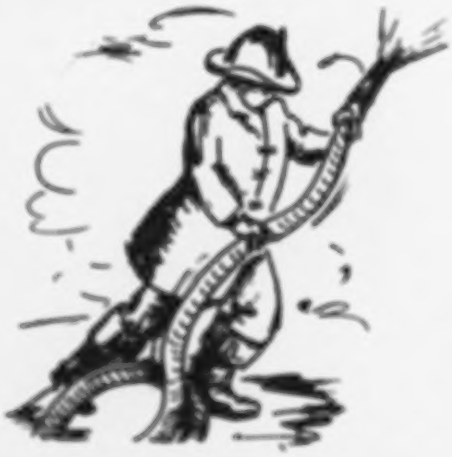


a





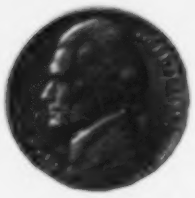


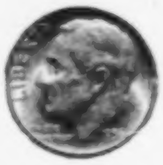


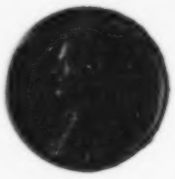
b

| | | | |
|---|---|---|---|
| BUTTER | BROWN | MEAT | BREAD |

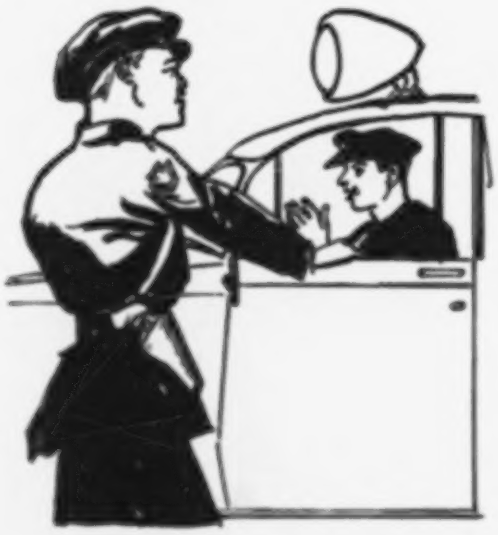
c

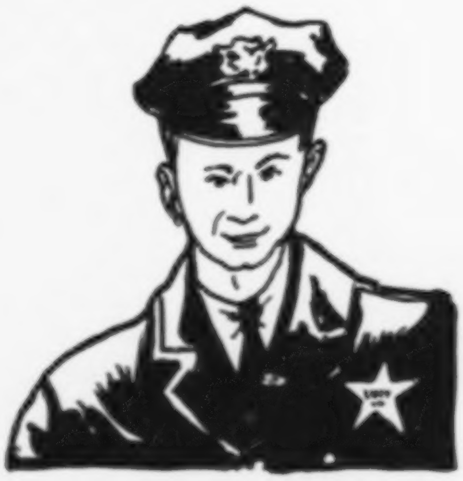


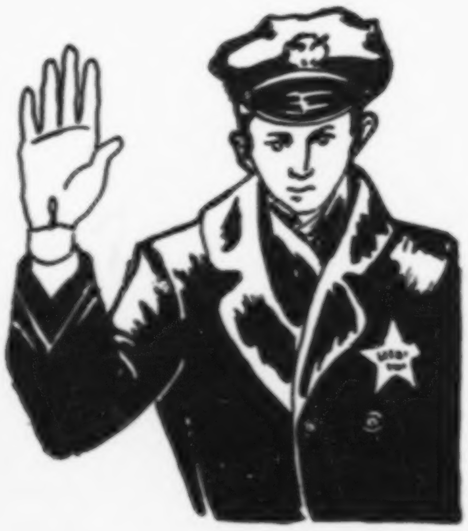




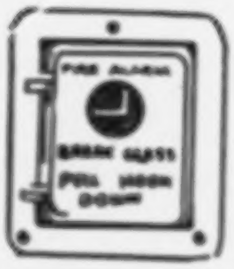
1

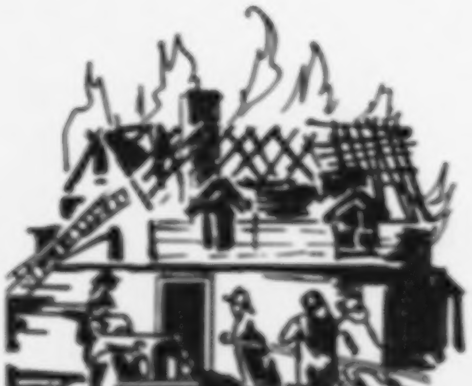


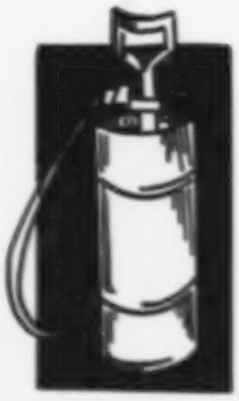




2


FIRE ALARM
BREAK GLASS
PULL HOOK DOWN





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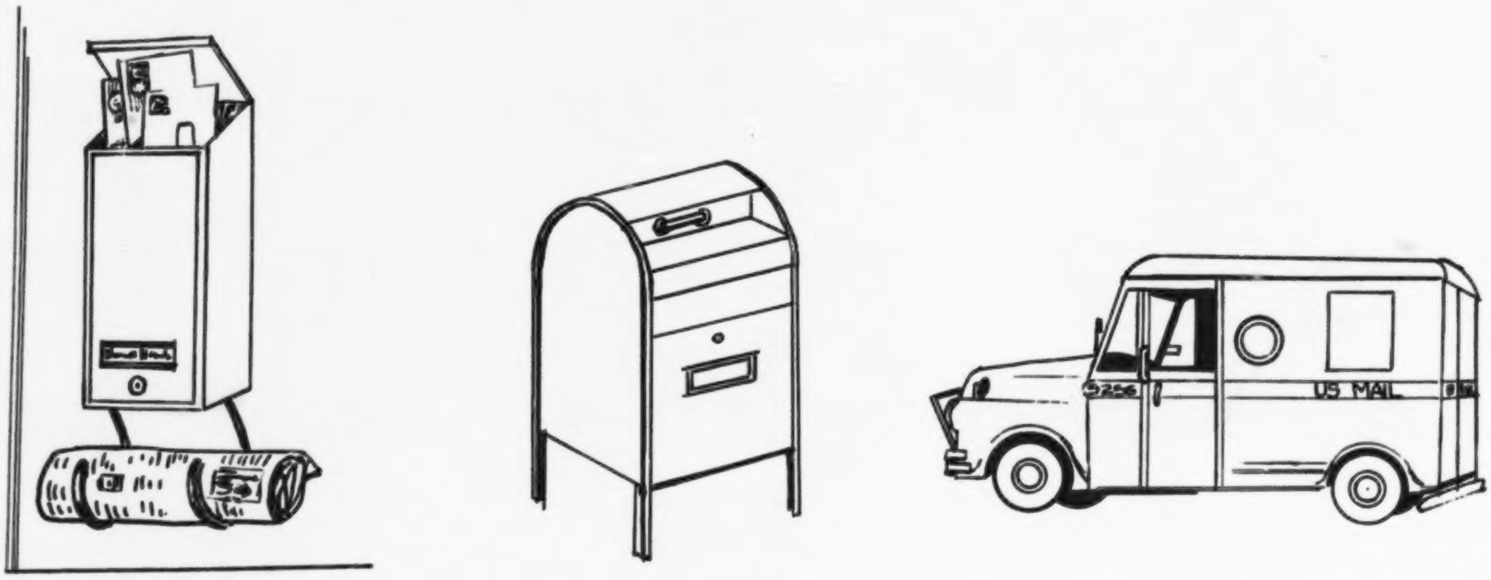

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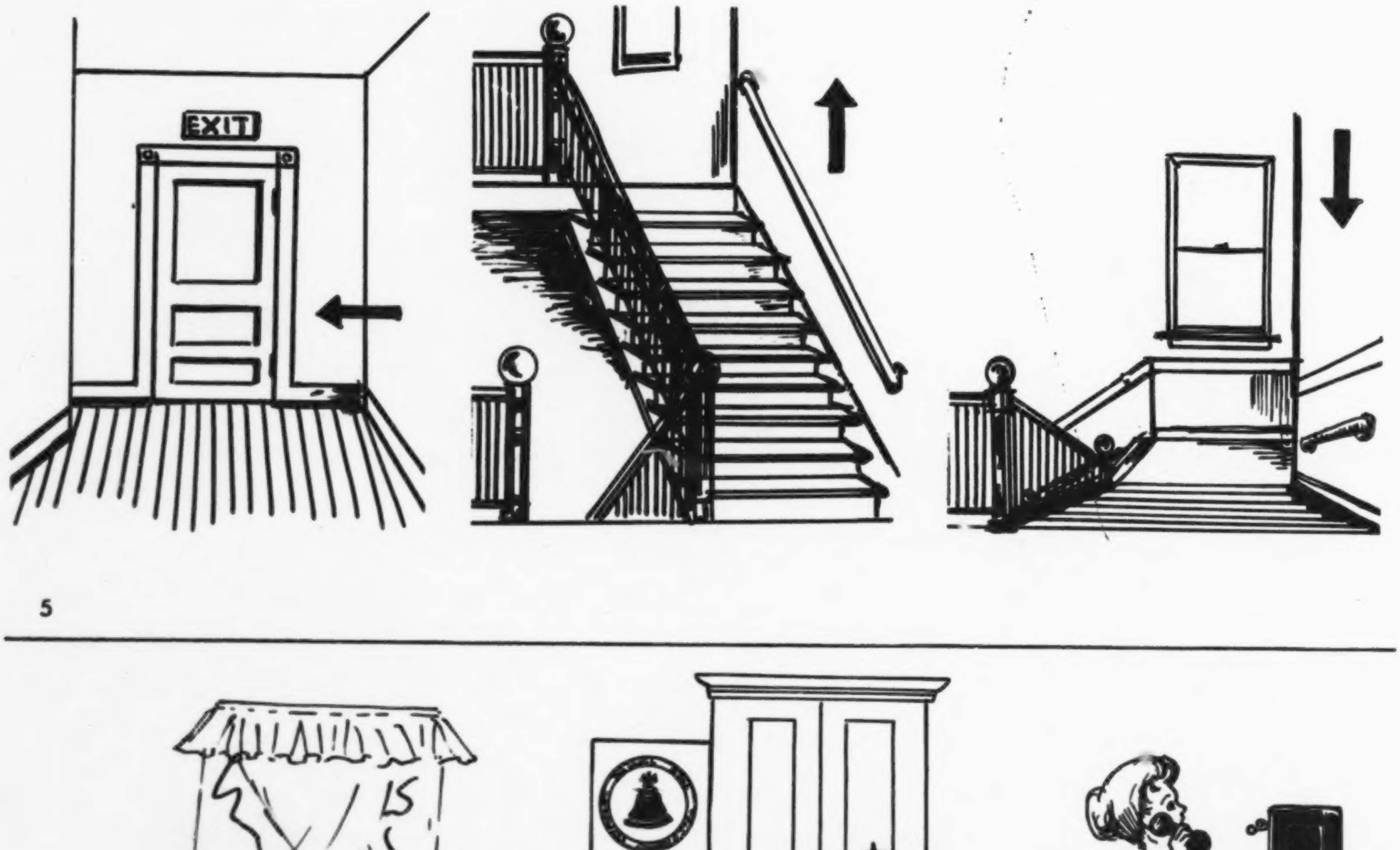

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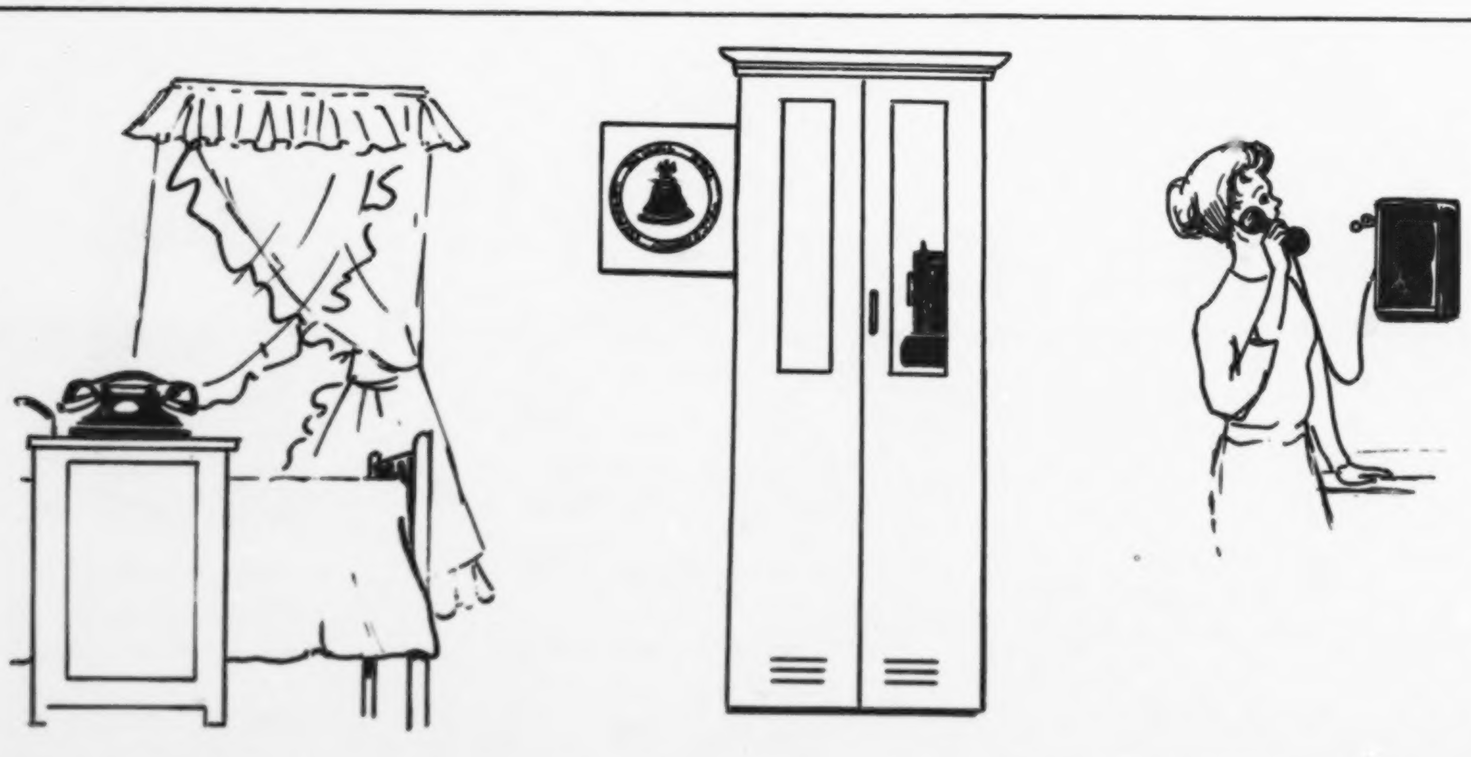

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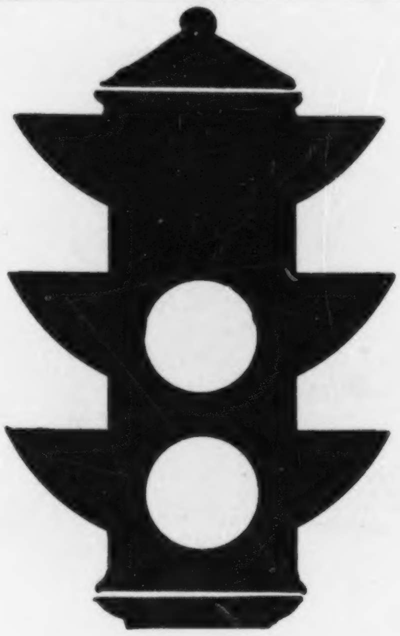
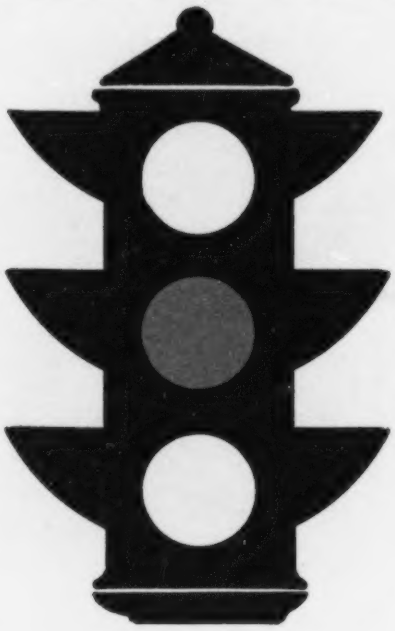
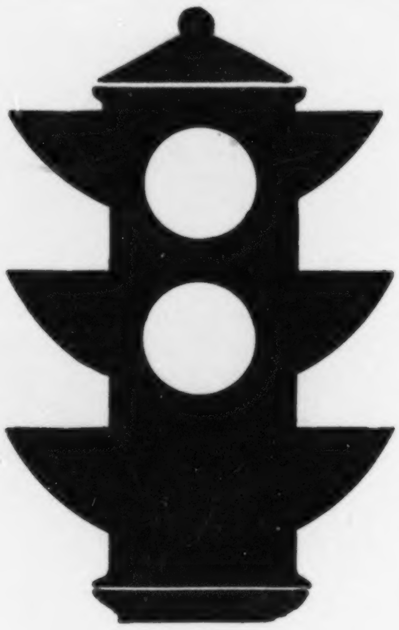

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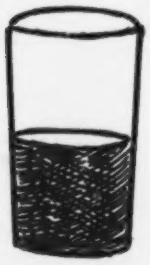
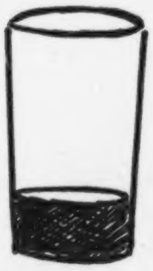
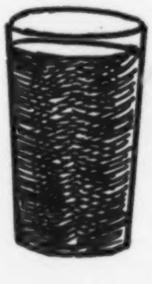

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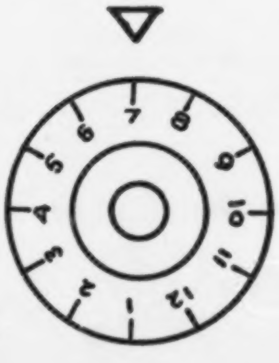
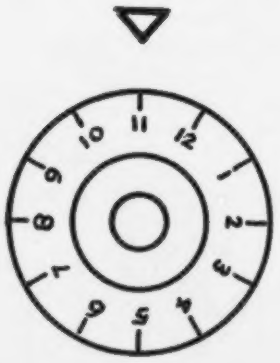
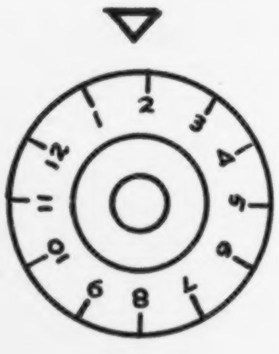
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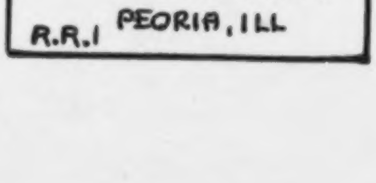
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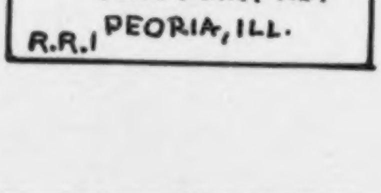
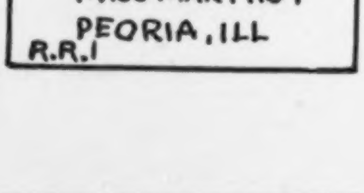
517 WESLEY
OAK PARK, ILL
MISS MARY HOY
R.R.1
PEORIA, ILL

JOHN SMITH
517 WESLEY
OAK PARK, ILL
12
MISS MARY HOY
R.R.1
PEORIA, ILL.

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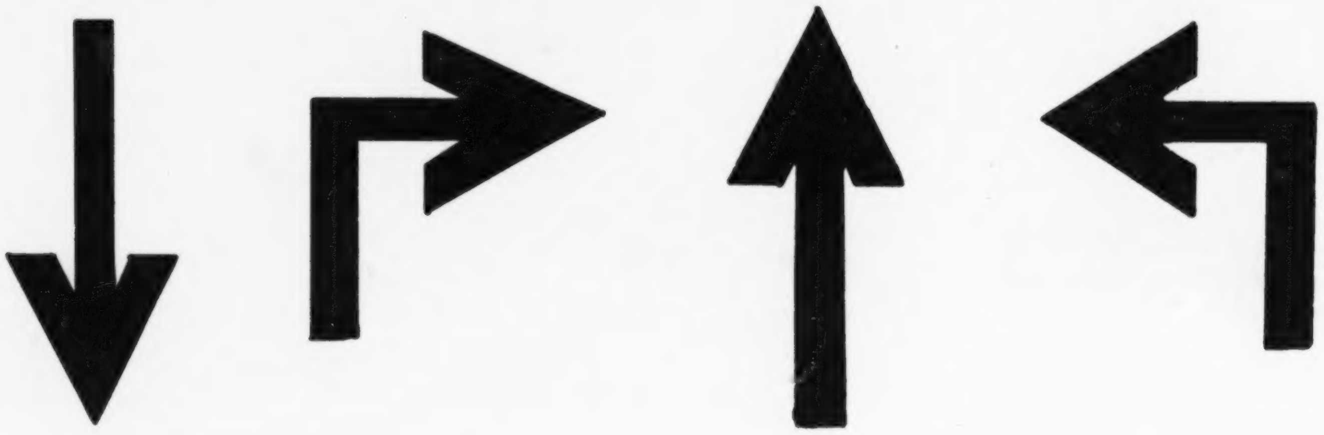
MISS MARY HOY
R.R.1
PEORIA, ILL

10



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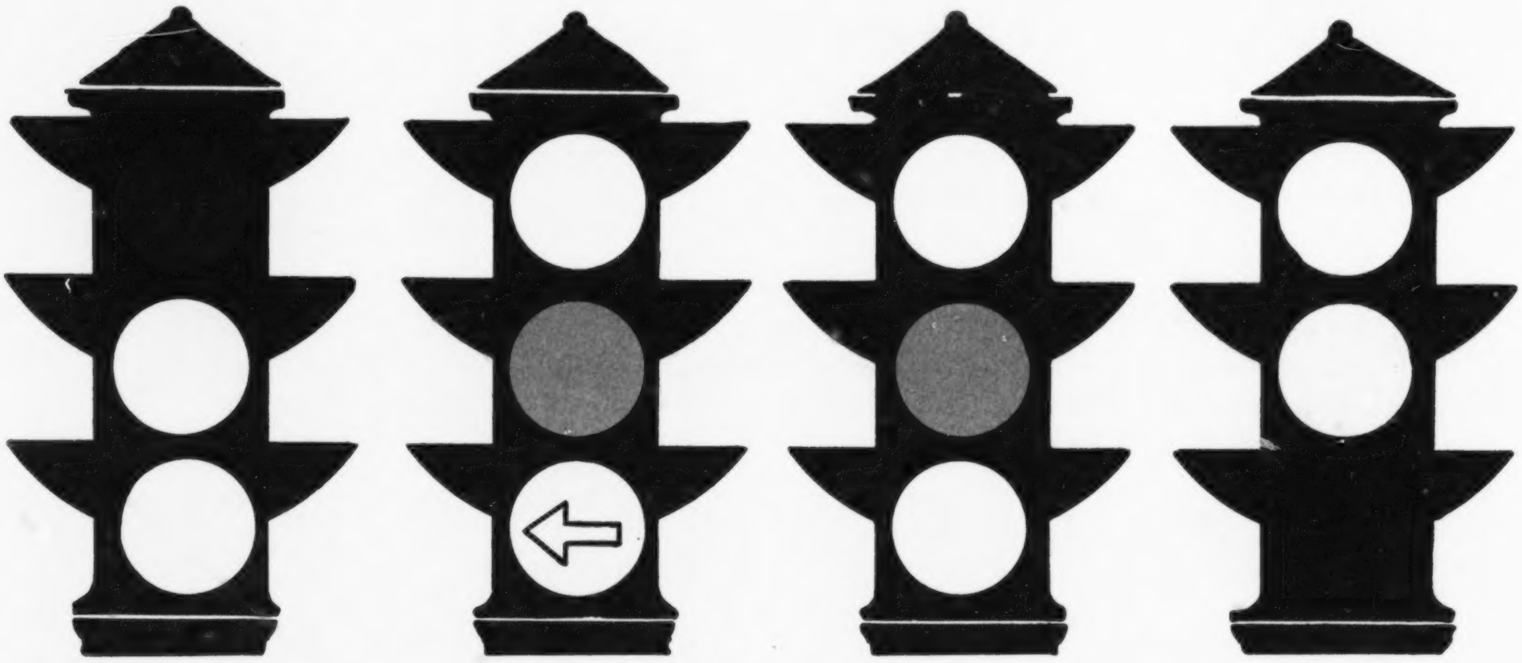

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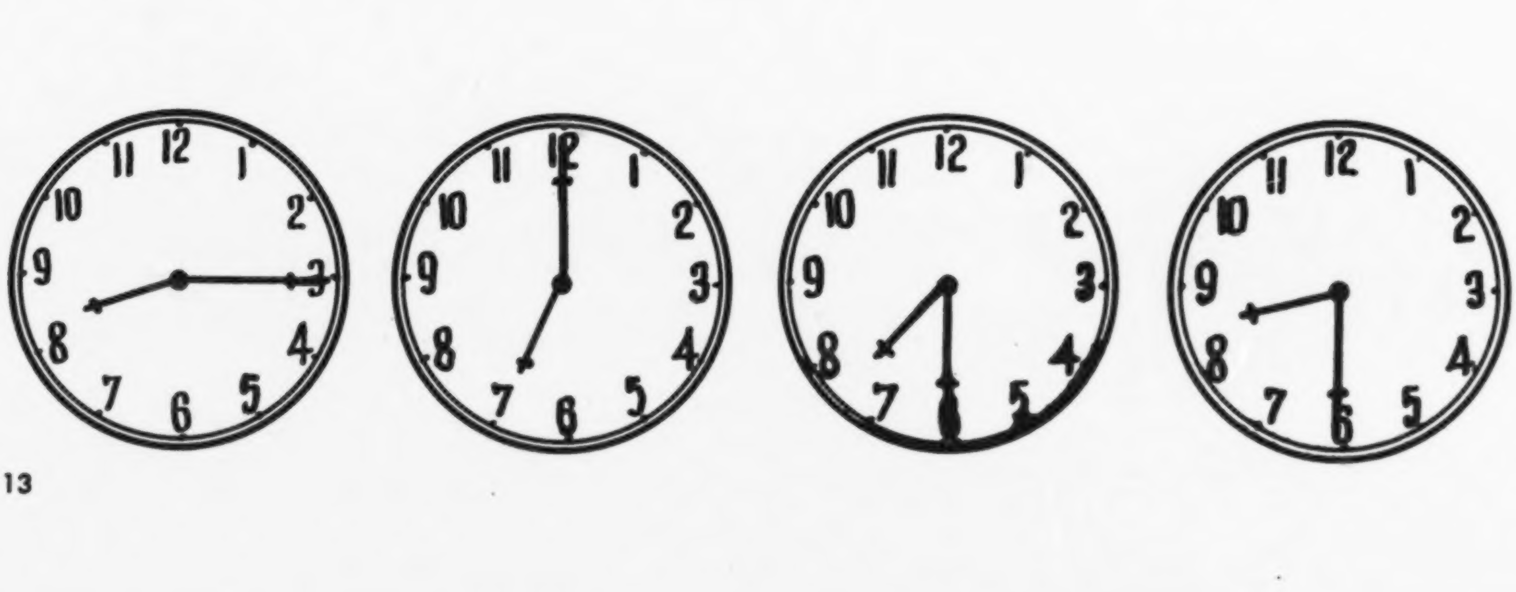

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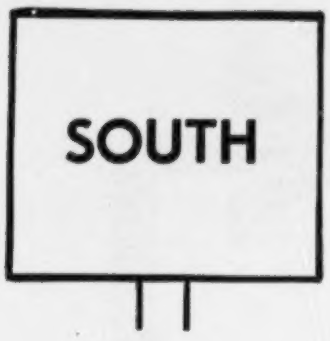
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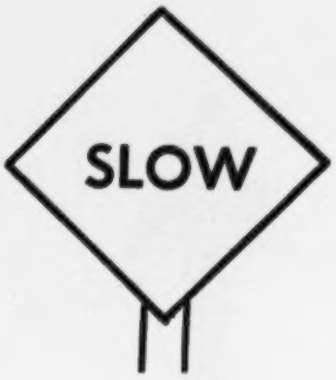
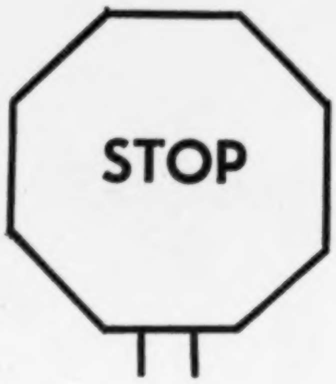
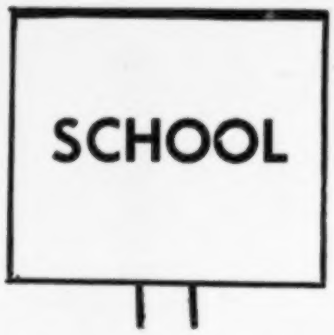
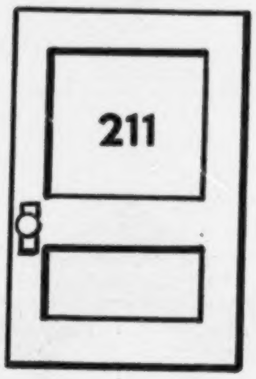

SLOW


STOP


SCHOOL

14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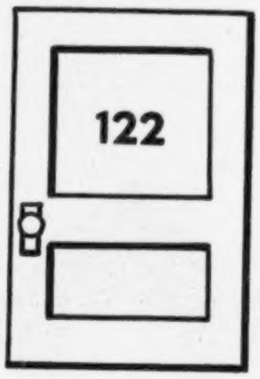
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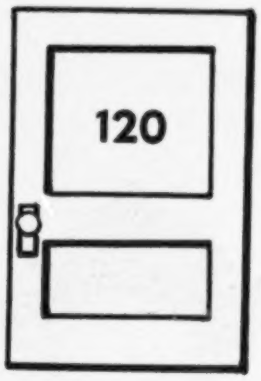
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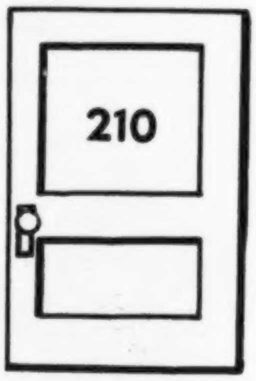
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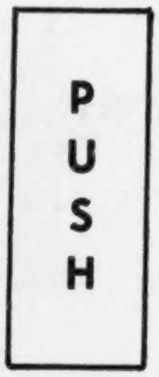
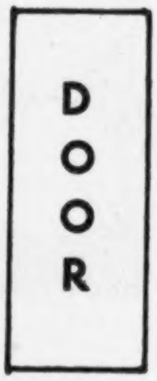
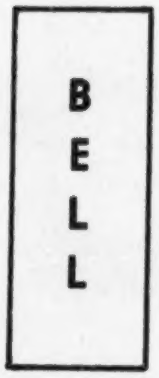
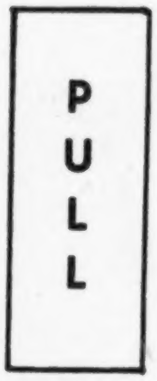
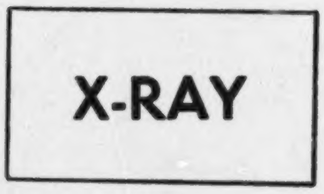

PUSH

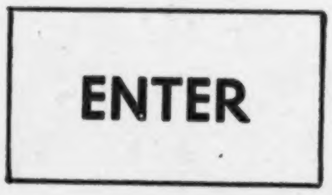

DOOR

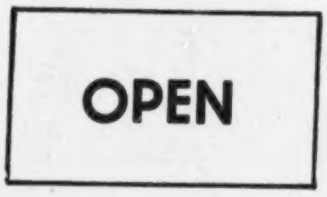

BELL

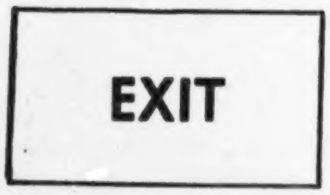

PULL

16


X-RAY


ENTER


OPEN


EXIT

17

| | | | |
|---|---|---|---|
| DANGER | DOCTOR | RIGHT | DENTIST |

18

| | | | |
|---|---|---|---|
| PULL DOWN | PUSH IN | WALK IN | KEEP OUT |

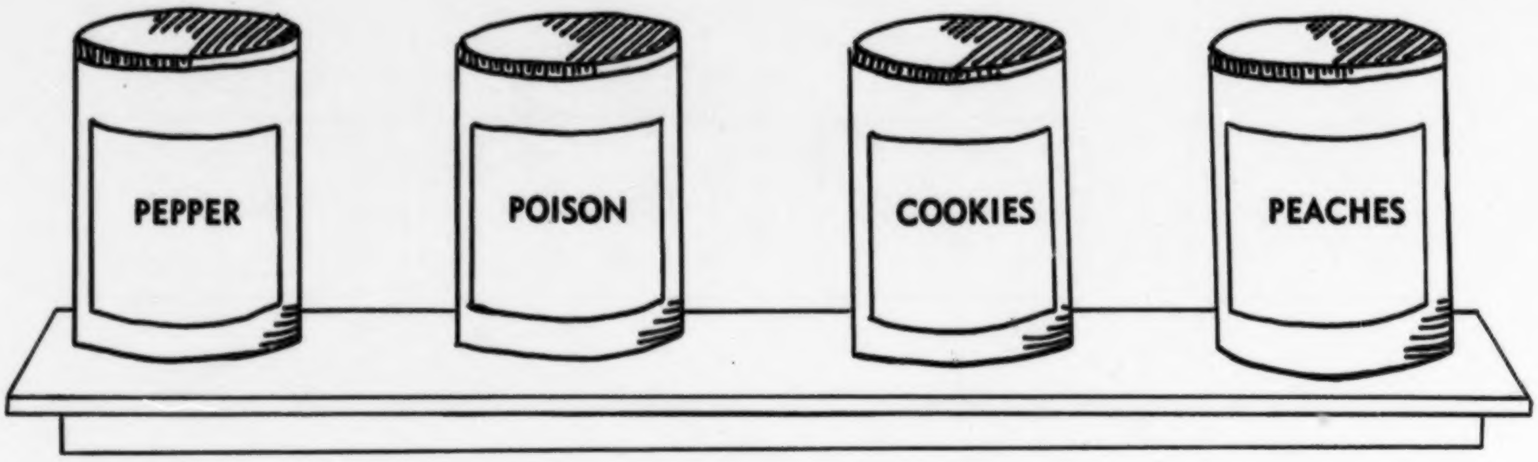
19

| | | | |
|---|---|---|---|
| BUS DRIVER | CAB STAND | BUS STOP | NEWS STAND |

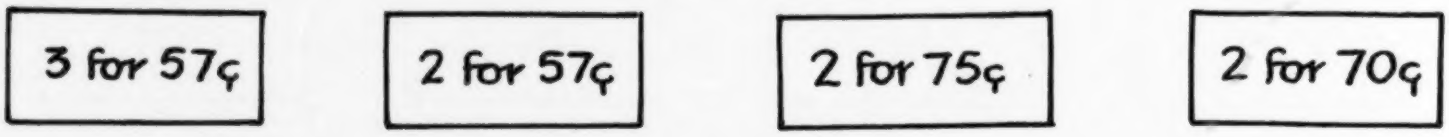
20

| | | | |
|---|---|---|---|
| NO SMOKING | NO SPITTING | NO SKATING | NO PARKING |

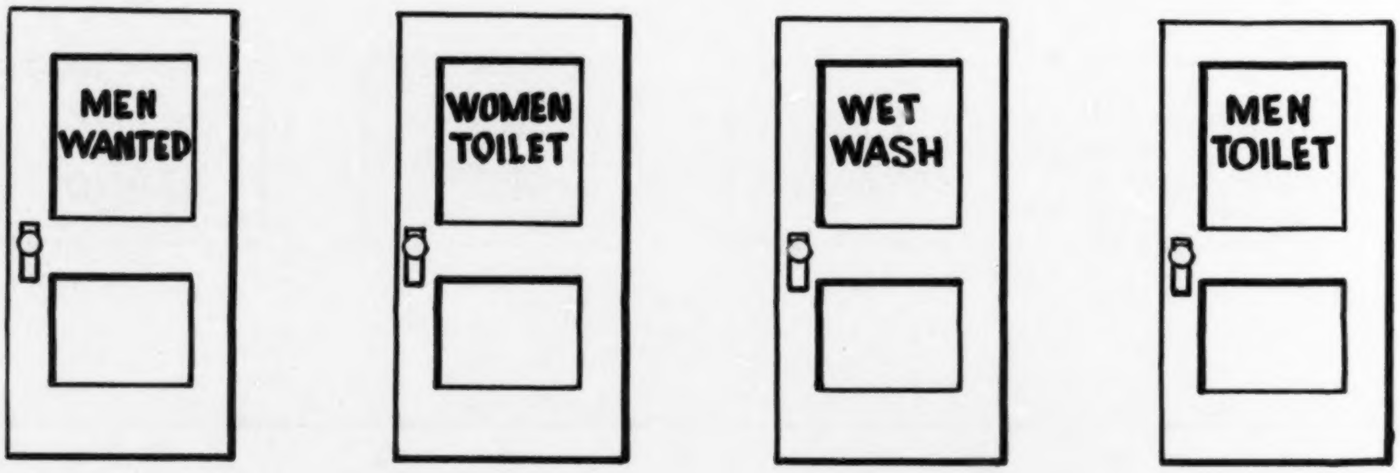
21


PEPPER
POISON
COOKIES
PEACHES

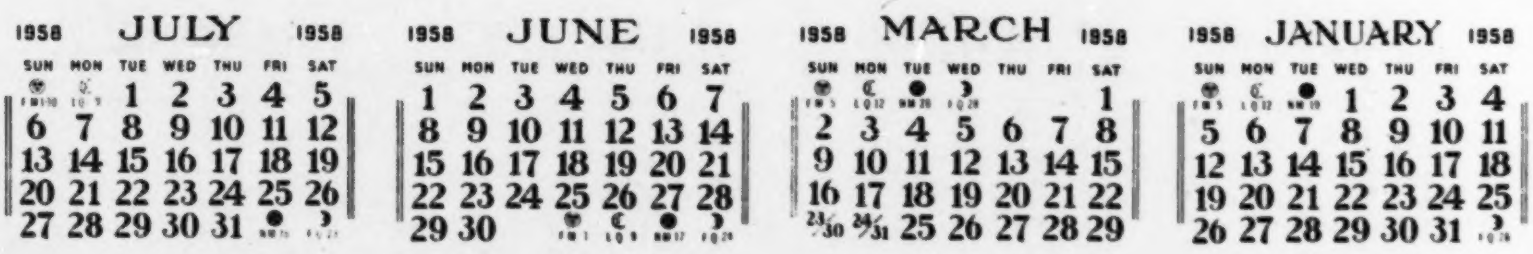
22


3 for 57¢
2 for 57¢
2 for 75¢
2 for 70¢

23


MEN WANTED
WOMEN TOILET
WET WASH
MEN TOILET

24



1958 JULY 1958

| SUN | MON | TUE | WED | THU | FRI | SAT |
|---|---|---|---|---|---|---|
| ○ | ☾ | 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 27 | 28 | 29 | 30 | 31 | ● | ☽ |

1958 JUNE 1958

| SUN | MON | TUE | WED | THU | FRI | SAT |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 |  | ○<br>FM 1 | ☾<br>LQ 9 | ●<br>NM 17 | ☽<br>FQ 24 |

1958 MARCH 1958

| SUN | MON | TUE | WED | THU | FRI | SAT |
|---|---|---|---|---|---|---|
| ○<br>FM 5 | ☾<br>LQ 12 | ●<br>NM 20 | ☽<br>FQ 28 |  |  | 1 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23/30 | 24/31 | 25 | 26 | 27 | 28 | 29 |

1958 JANUARY 1958

| SUN | MON | TUE | WED | THU | FRI | SAT |
|---|---|---|---|---|---|---|
| ○<br>FM 5 | ☾<br>LQ 12 | ●<br>NM 19 | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 | ☽<br>FQ 26 |

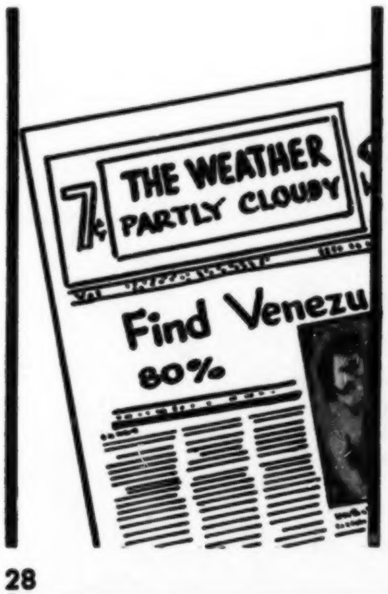
25

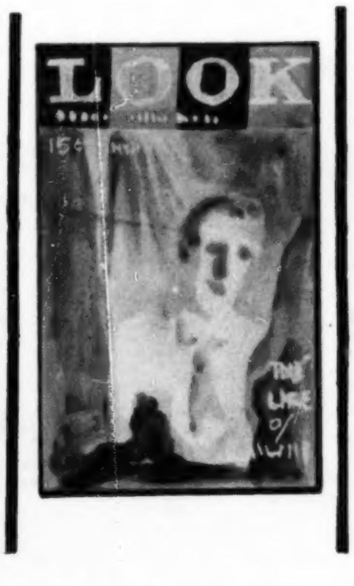
CEREALS | FRUITS | MEATS | FISH

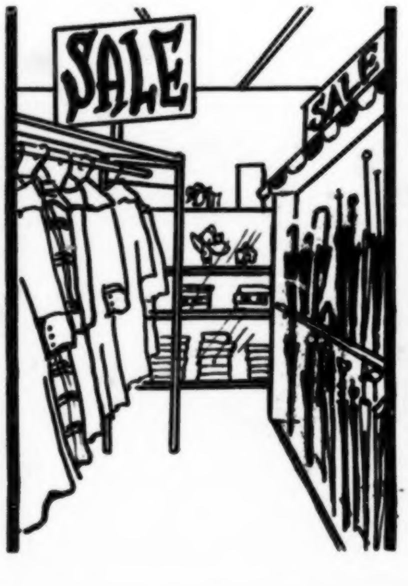
26

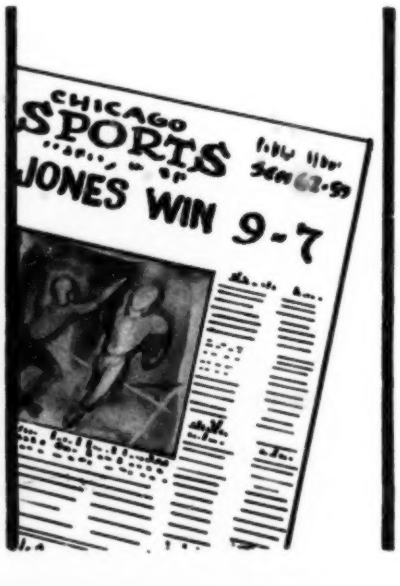
1:00 | 12:00 | 2:00 | 9:00

27

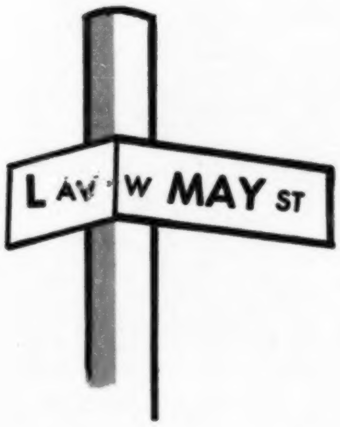

7¢
THE WEATHER
PARTLY CLOUDY
Find Venezu
80%

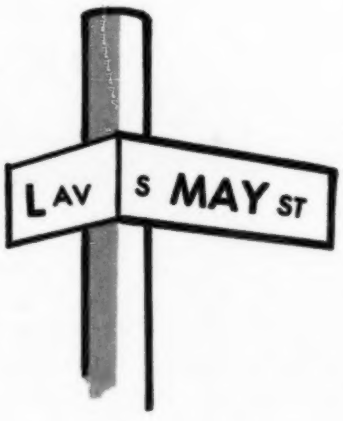


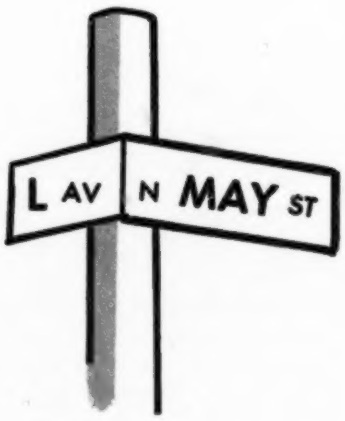


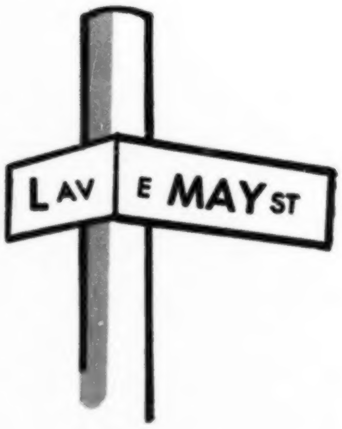

CHICAGO
SPORTS
JONES WIN 9-7

28









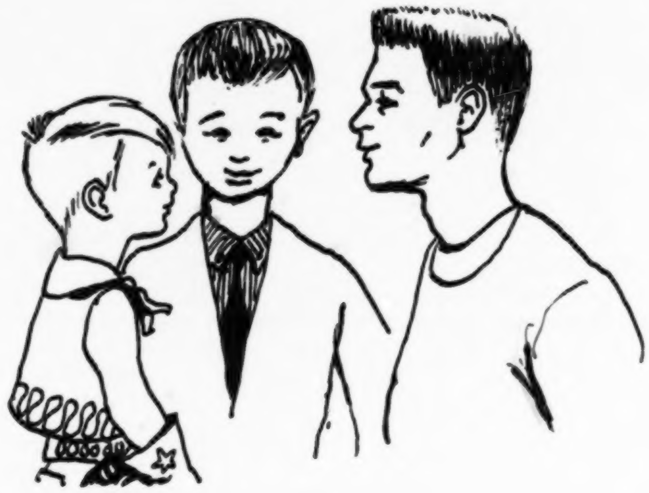
29

STOP

**DIRECTIONS**

Look at the pictures. Then look at the words.
Put an X on the word or words that best tell about the picture.

**SAMPLE**



TOYS BAGS BOYS GIRLS

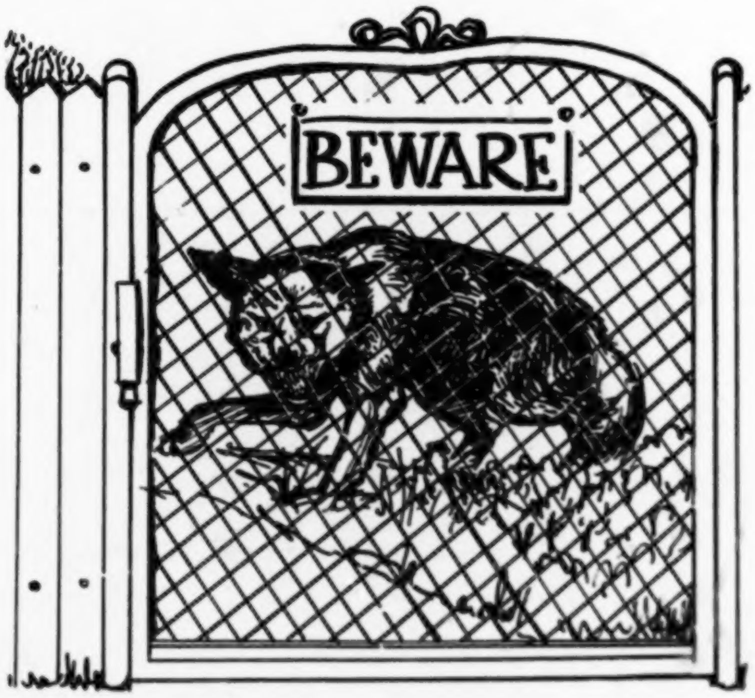
a

TWO DOGS

BAD BOY

ONE BOY

BAD DOG



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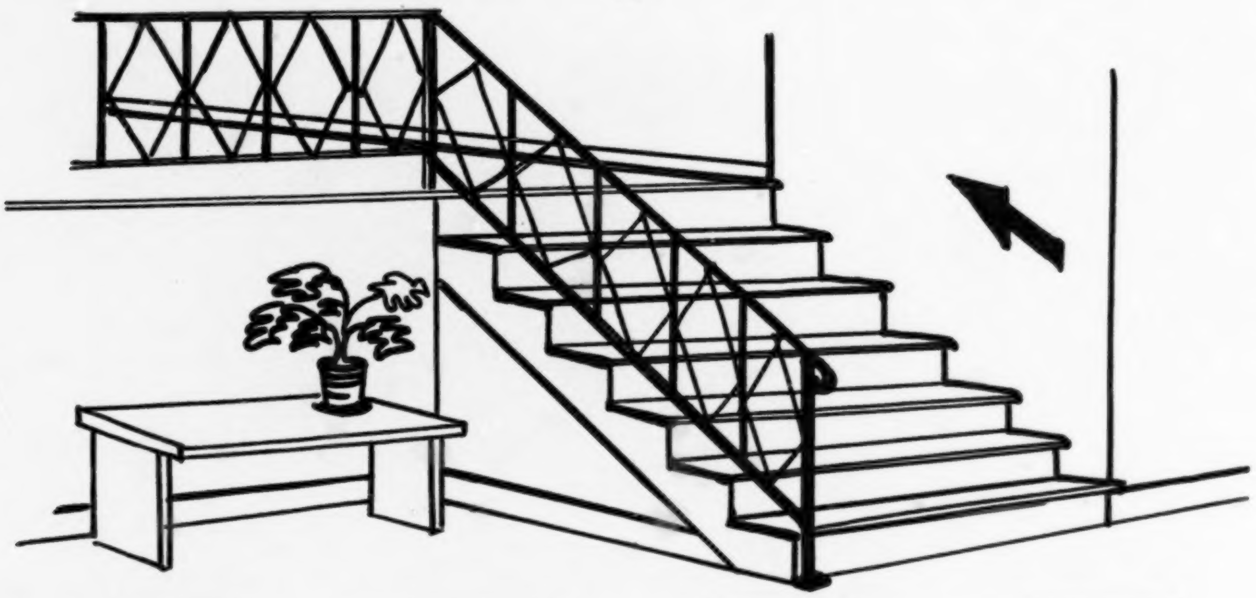

TO UP US ON

30

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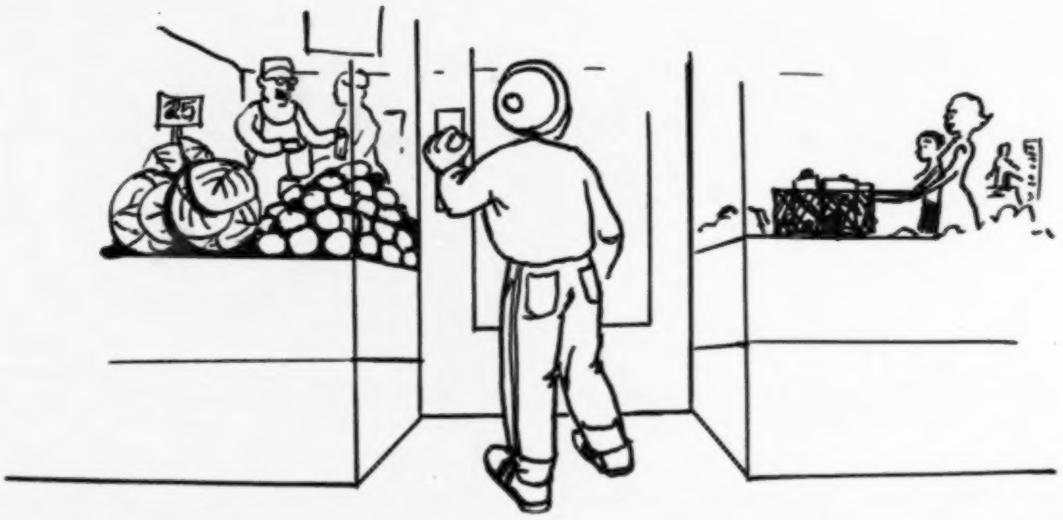

ON AN NO IN

31

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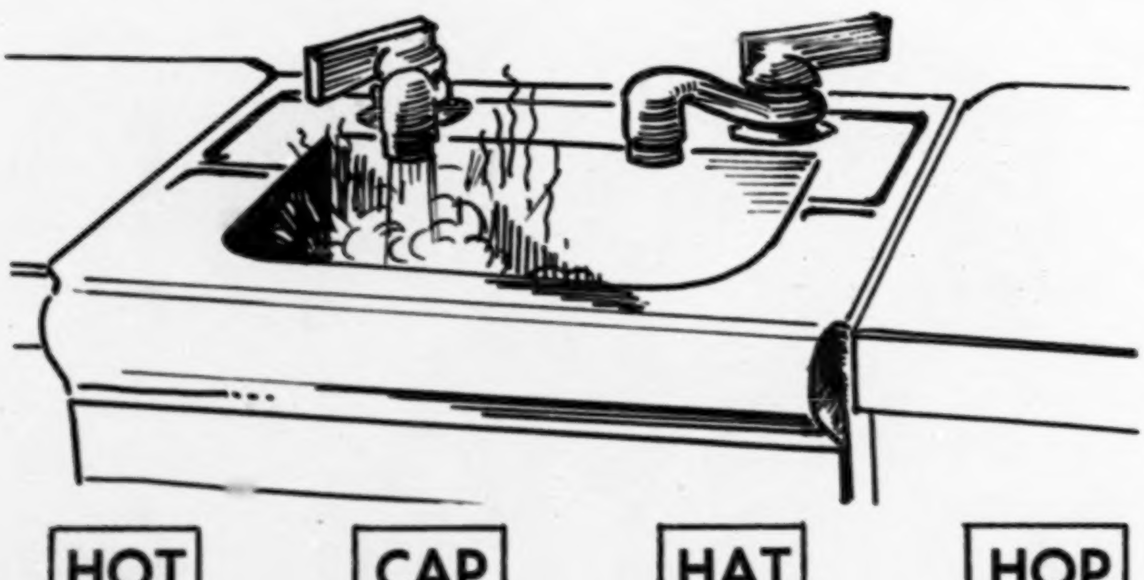
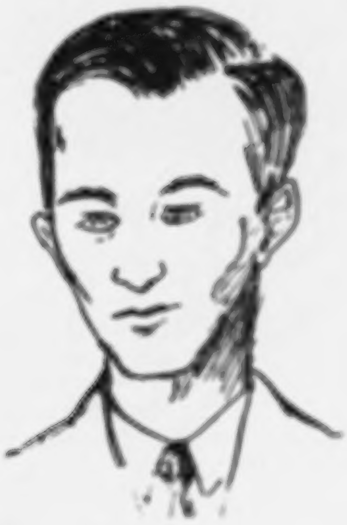
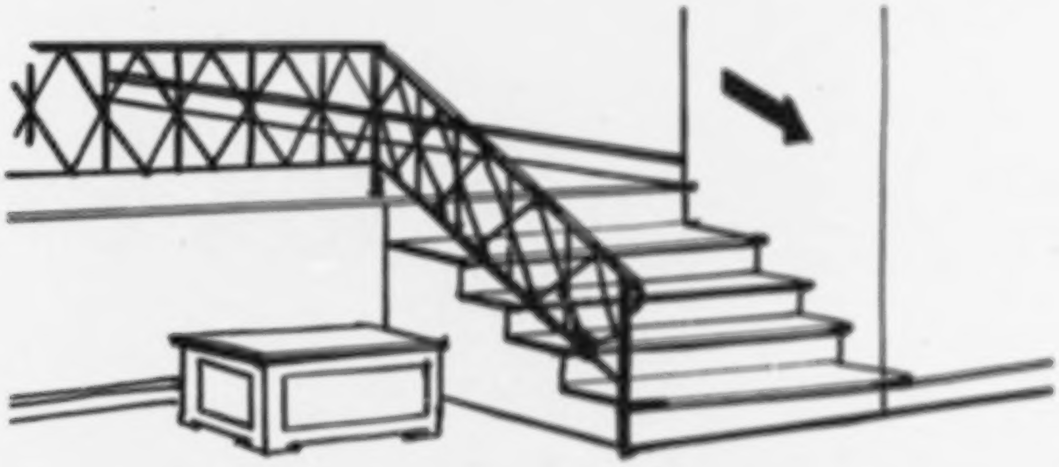


HOT CAP HAT HOP

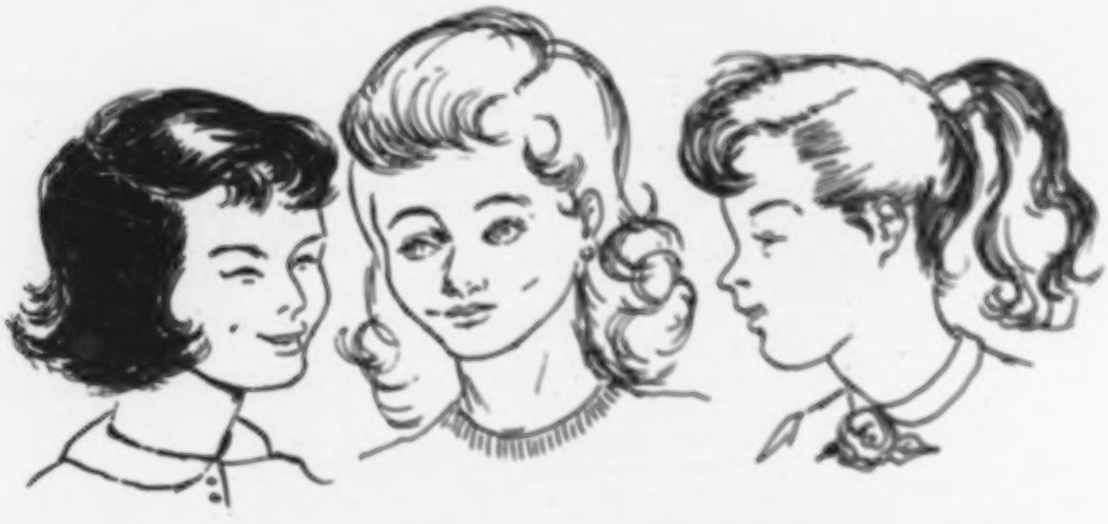
32



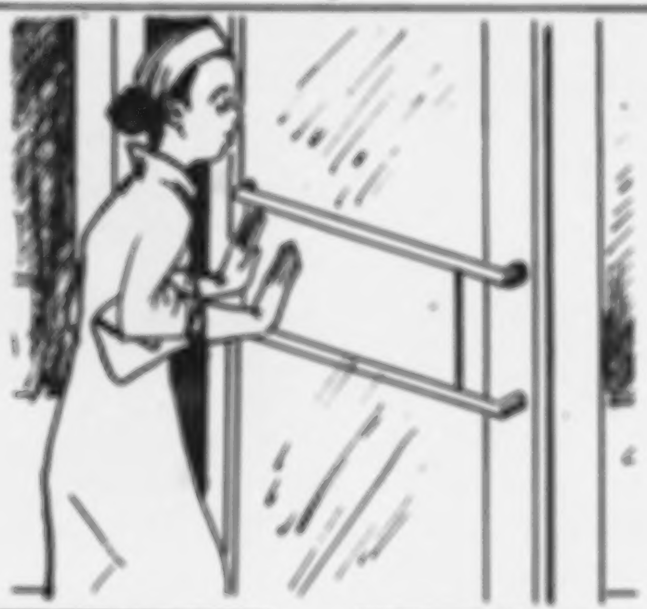
33 Mr. Mrs. Miss Mom



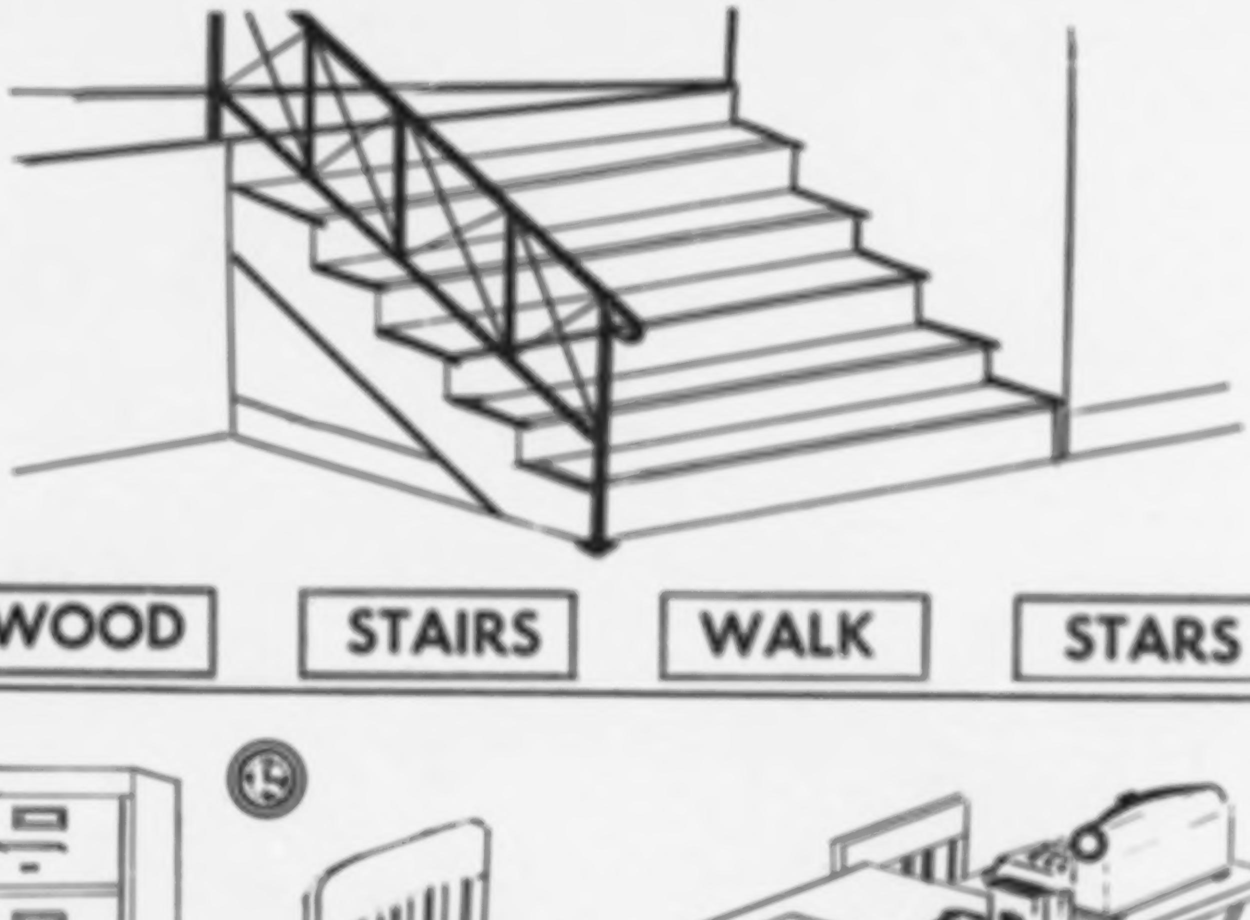
34 WALK BROWN STARS DOWN



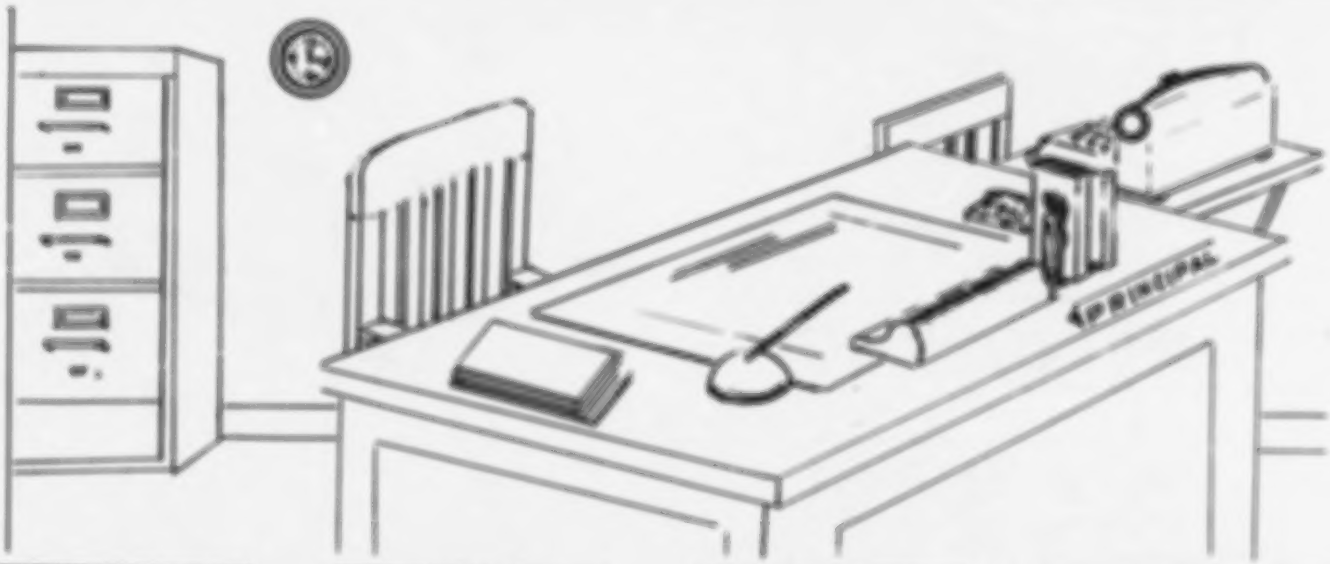
35 FIRE GIFTS GIRLS GATE



36 PUFF PAPER WISH PUSH



37 WOOD STAIRS WALK STARS



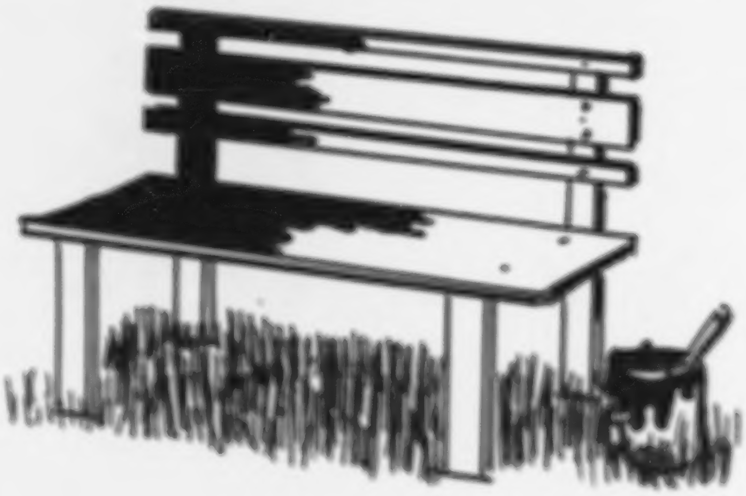
38 NOTICE TICKETS OFFICE POLICE

HELP WANTED

WET PAINT

WET WASH

PARK HERE



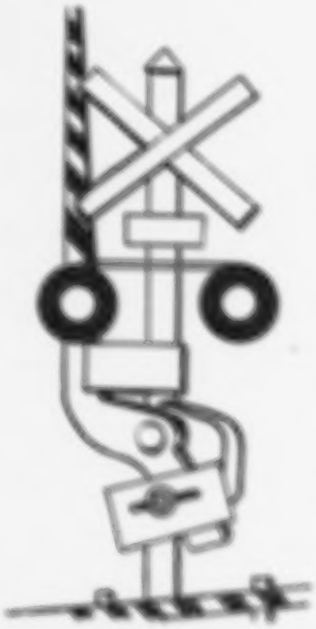
39

SCHOOL CROSSING

RAILROAD STATION

CROSS WALK

RAILROAD CROSSING



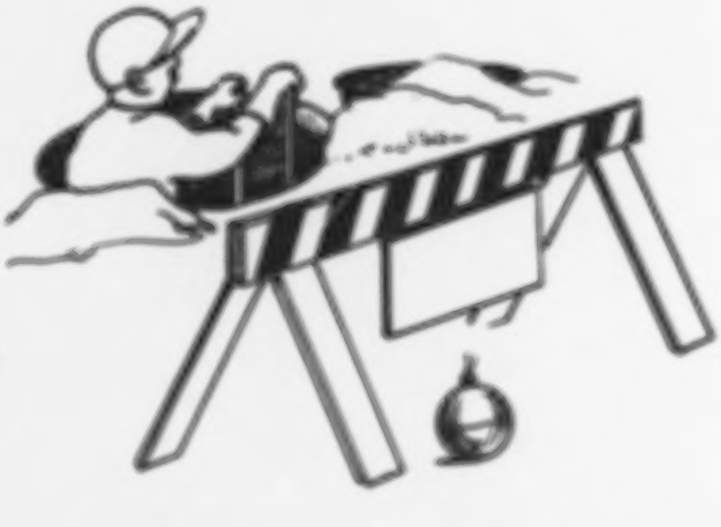
40

MEN WANTED

SCHOOL CROSSING

MEN WORKING

PUSH DOWN



41

# ARE YOU WIDE AWAKE?

Birthday________________________ Boy or Girl________________

Age________________ Name________________________

Date________________________ School________________________

32

I____________ II____________ III____________ Total____________

# EVERY DAY READING
# FOR
# FUN AND MEANING

## BOOK TWO

Prepared in the Cooperative Research Project

by

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and

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Director
Cooperative Research Project

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Assistant Superintendent
of Schools in Charge
of Special Education

Benjamin C. Willis
General Superintendent of Schools

This publication was based on research performed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare.

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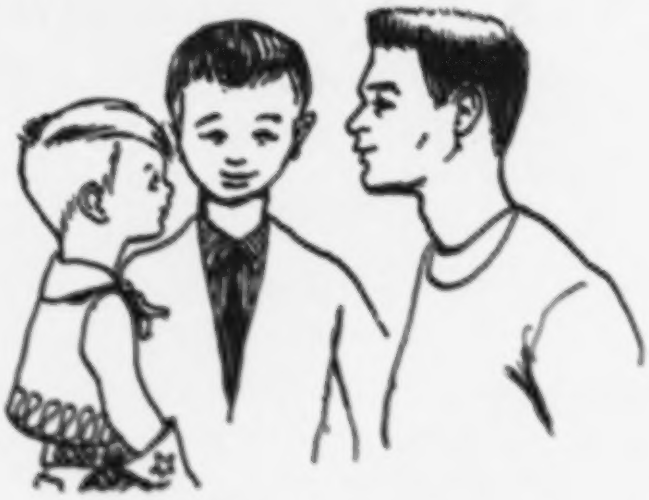
Board of Education
Chicago, Illinois

**DIRECTIONS**

Look at the pictures. Then look at the words.
Put an X on the word or words that best tell about the picture.

**SAMPLE**



a

TOYS BAGS BOYS GIRLS

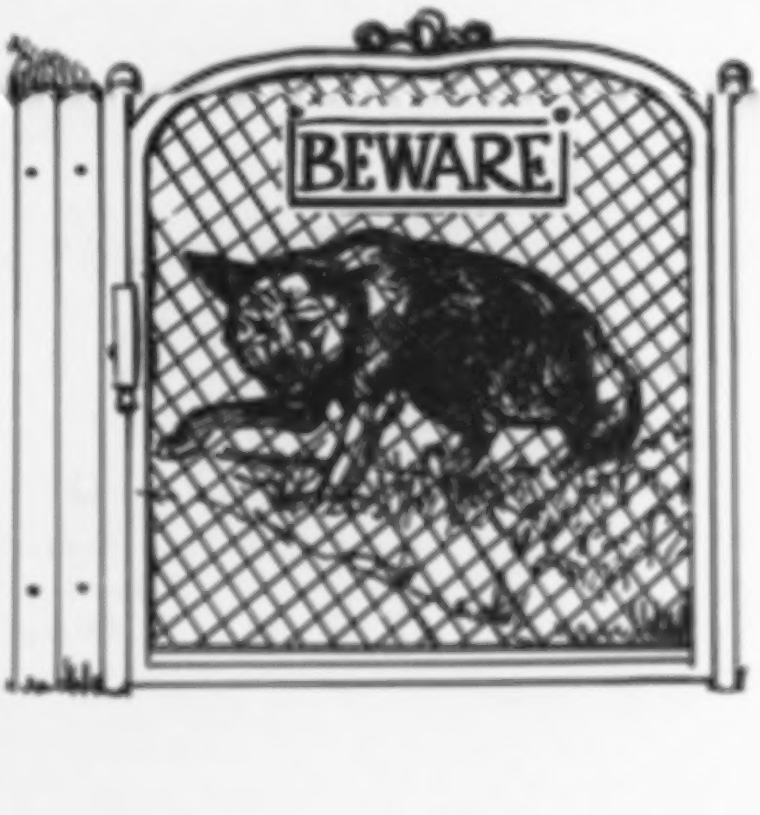
---

TWO DOGS

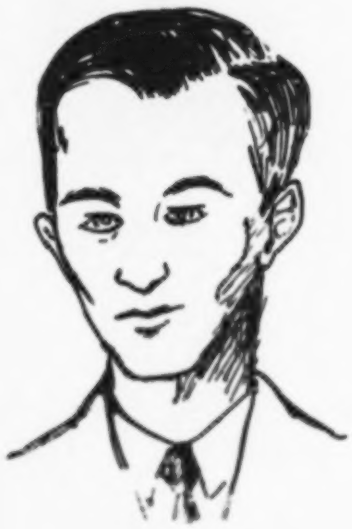
BAD BOY

ONE BOY

BAD DOG

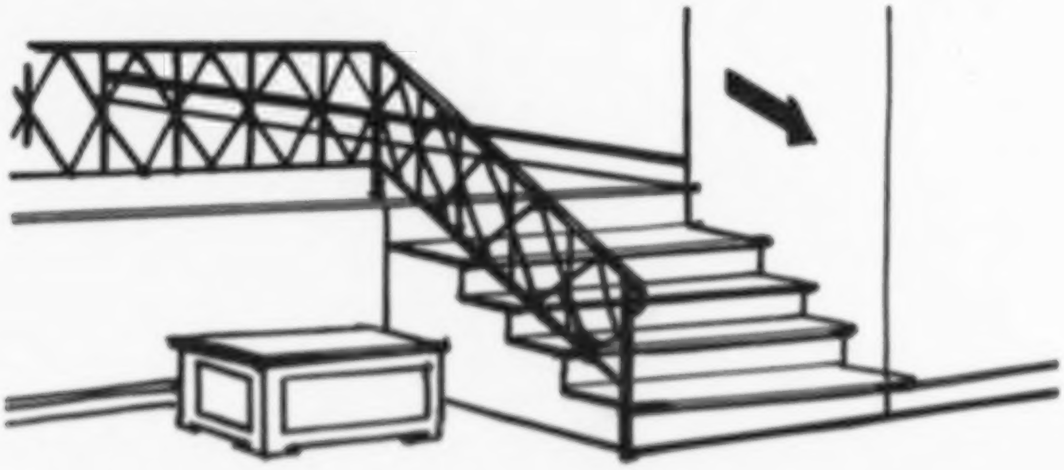


b



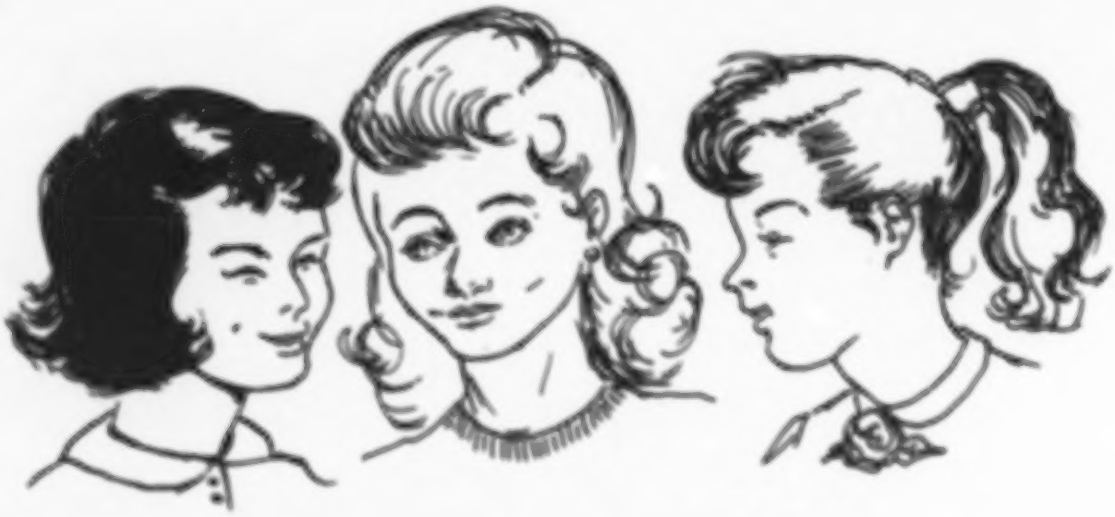
Mr. Mrs. Miss Mom

1



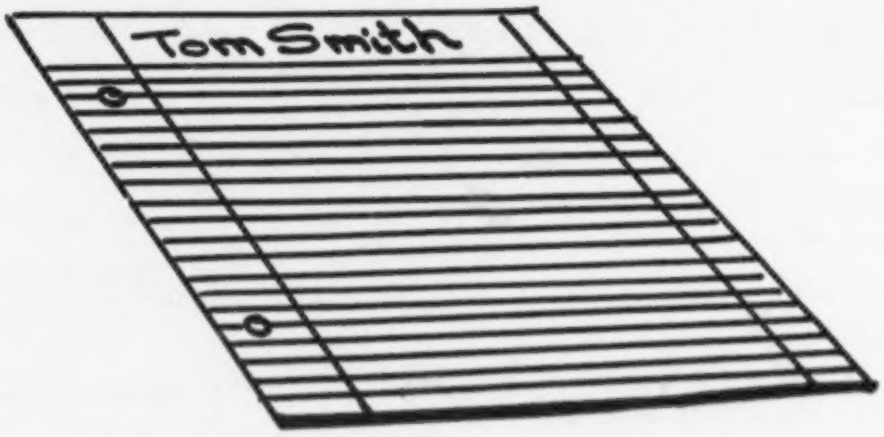
WALK BROWN STARS DOWN

2



FIRE GIFTS GIRLS GATE

3



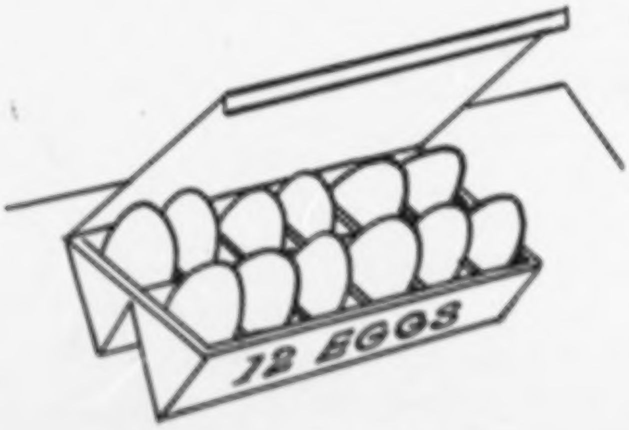
DRAW

NAME

NEAR

DATE

4



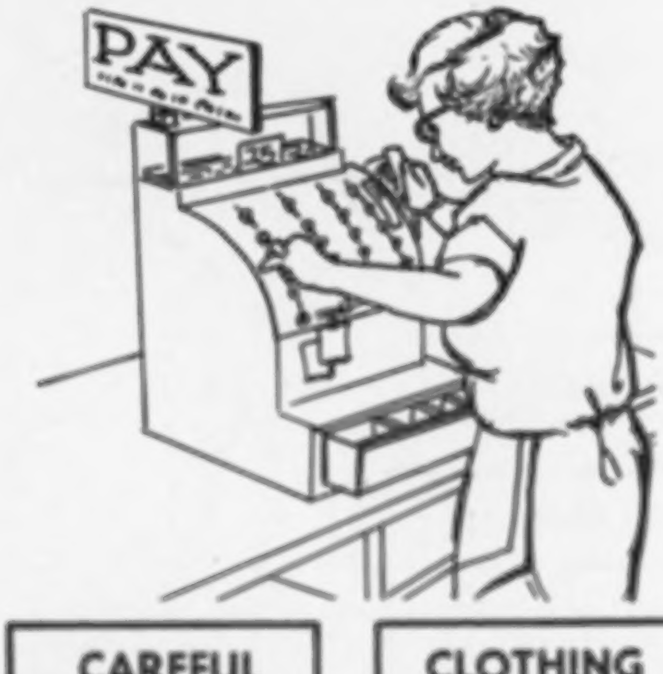
TWENTY

MONEY

DOZEN

FARMS

5



MONKEY

CAREFUL

CLOTHING

CASHIER

6

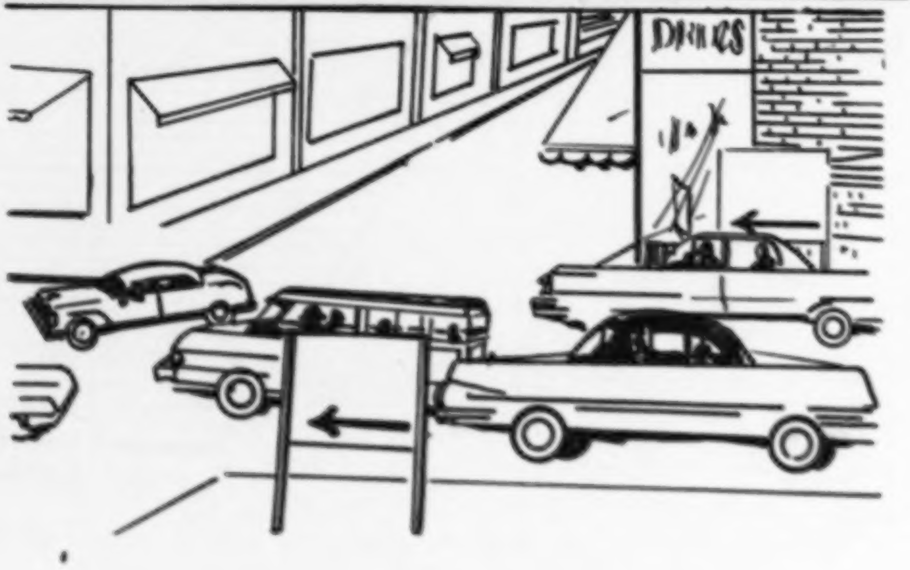
6

ONE DAY

SUBWAY

ONE WAY

BUS STOP



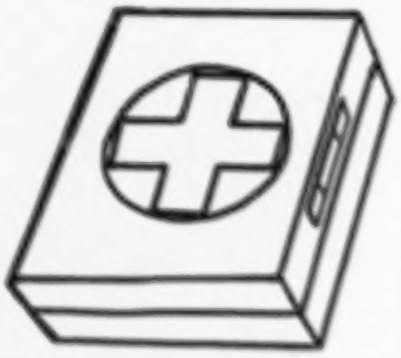
7

RED LIGHT

FIRST FLOOR

CROSS WALK

FIRST AID



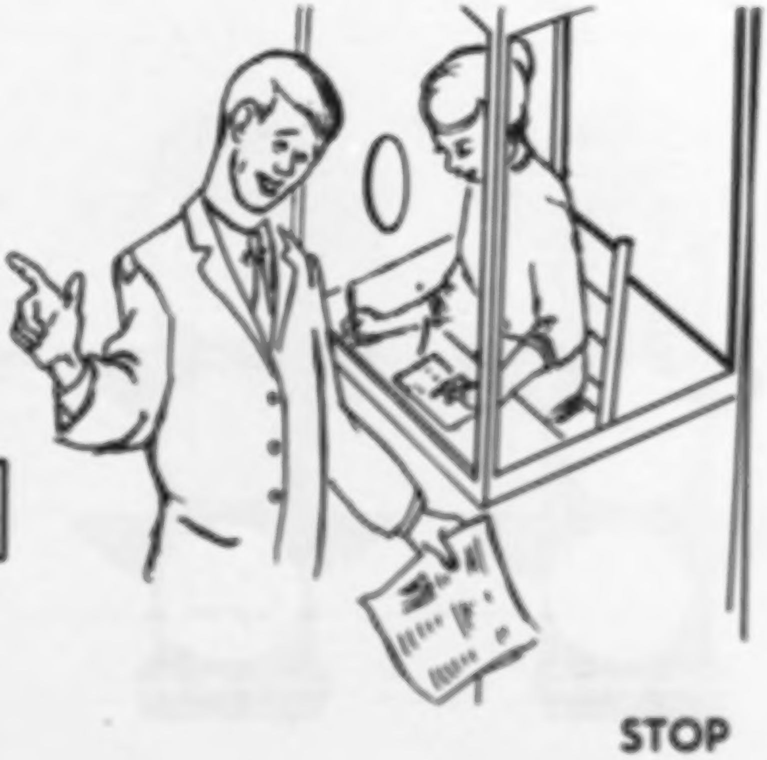
8

INFORMATION

AMBULANCE

REFRESHMENTS

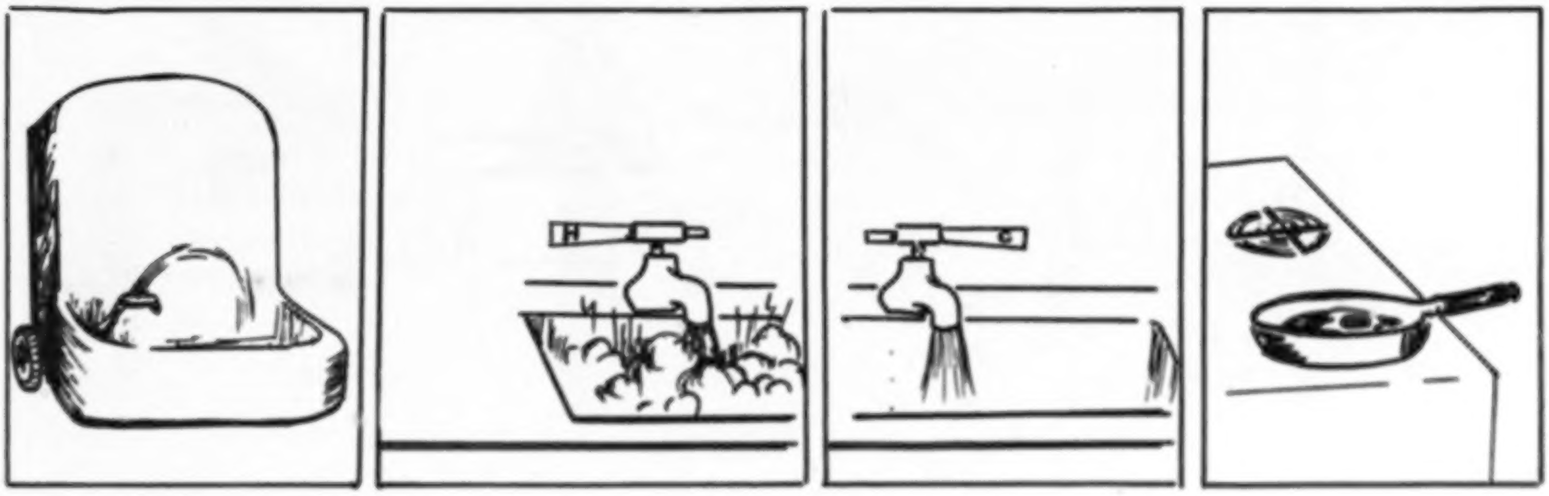
TELEPHONE



9

STOP

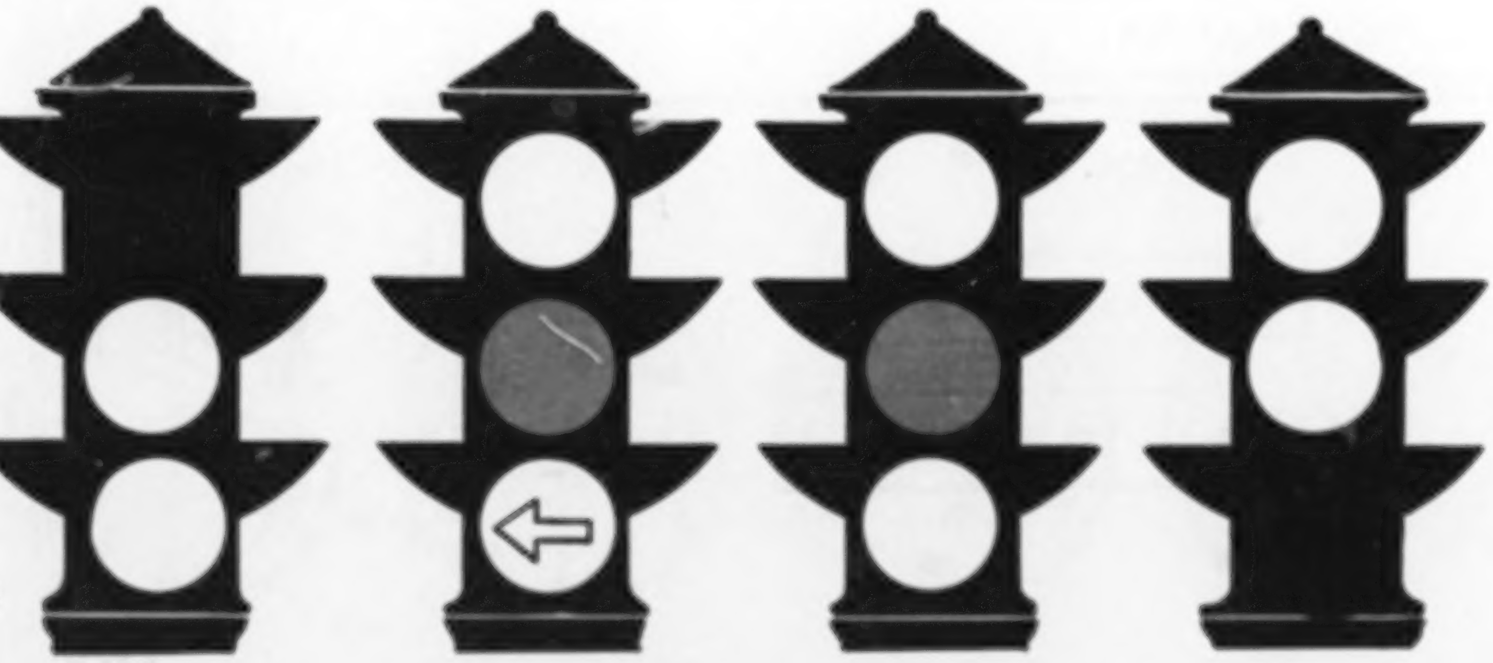
## SAMPLE



a

**BUTTER** **BROWN** **MEAT** **BREAD**

b



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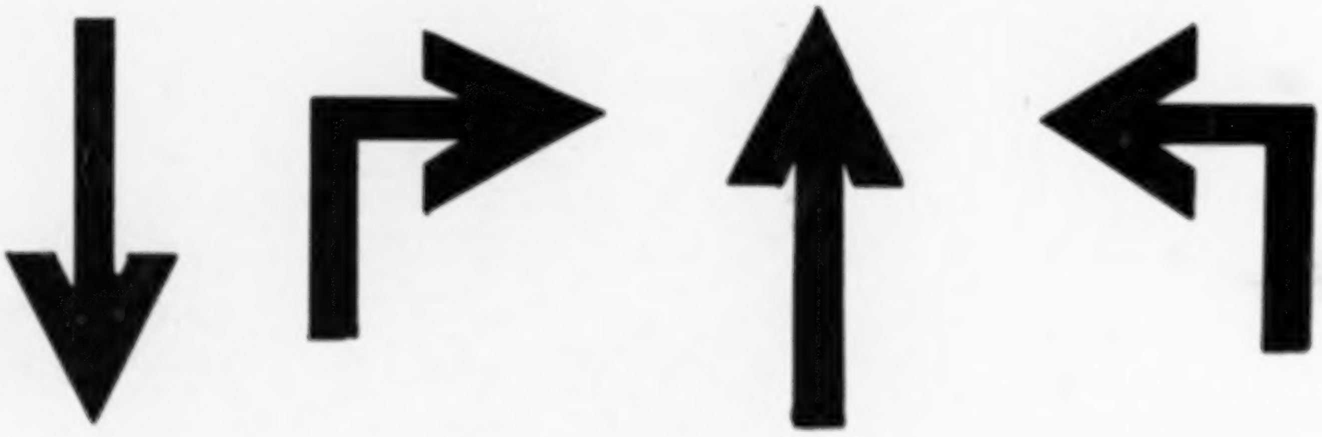

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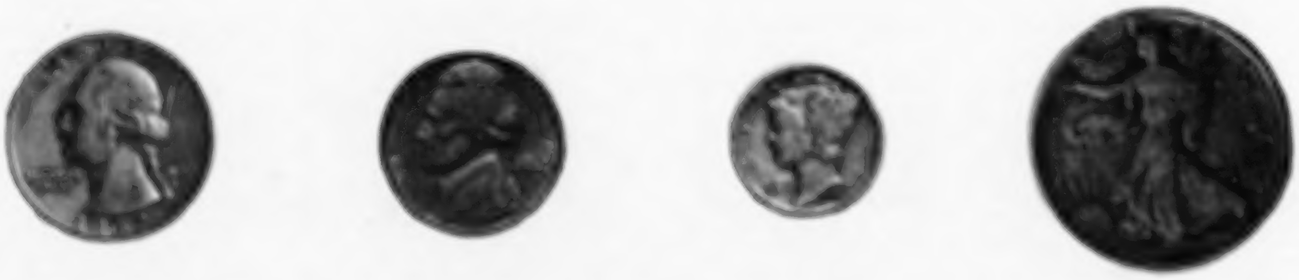
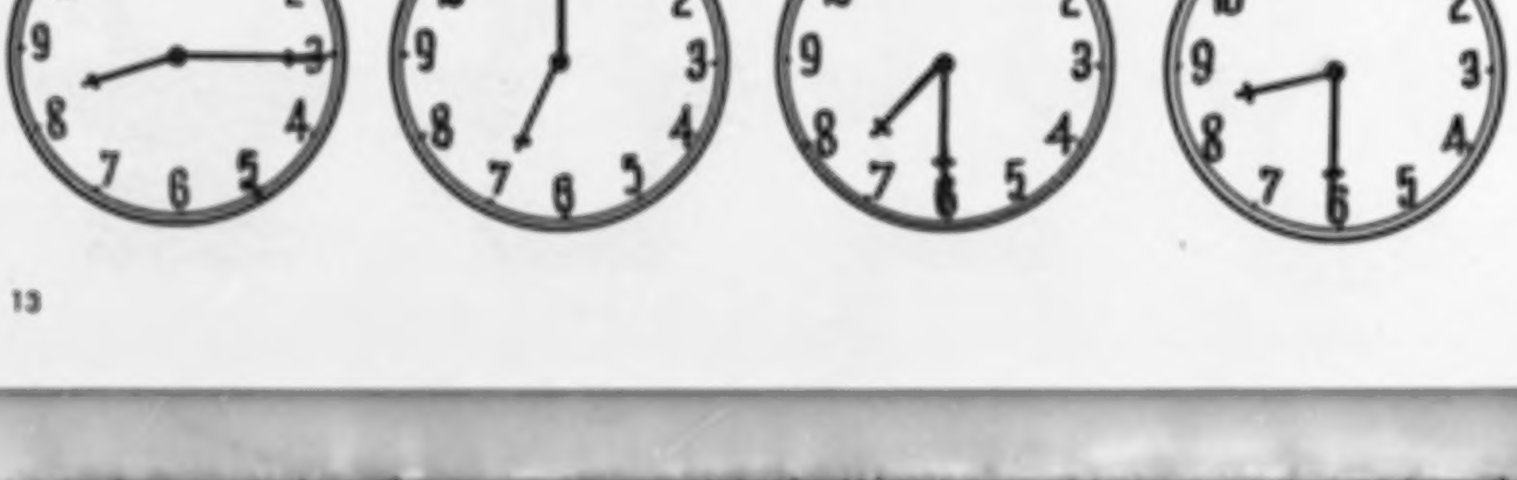


12



13

PUSH

DOOR

BELL

PULL

14

CLOSED

ENTER

OPEN

EXIT

15

PUSH IN

KEEP OUT

PULL OUT

STEP DOWN

16

LUNCH

LIBRARY

DANGER

DOCTOR

17

PEPPER POISON COOKIES PEACHES

18

SPEED LIMIT 25 MILES

MERGING TRAFFIC

RESUME SPEED

SPEED LIMIT 35 MILES

19

KEEP AWAY FROM FIRE

KEEP IN A COOL PLACE

HOLD ON TO HANDRAIL

KEEP OFF THE LAWN

20

BOARD BUS HERE

MOVE TO THE REAR OF THE BUS

IN CASE OF EMERGENCY PULL DOWN

DO NOT PUT HEAD OR ARMS OUT OF WINDOW

21

STOP

11

**SAMPLE** **DIRECTIONS**

Father was driving the car. Suddenly he came to the end of a street. He had to turn around and go back.

Put an X on the sign that father saw.

| STOP CAR | BUS STOP | DEEP END | DEAD END |
|---|---|---|---|

a

---

Bob looked at the SALE paper.
He had only 20c.

Put an X on what Bob could buy.

**$$ SALE $$**

| | | |
|---|---|---|
| SOAP | 2 bars | 33c |
| ICE CREAM | 1 pt. | 25c |
| BANANAS | 2 lbs. | 20c |
| ORANGES | 2 doz. | 70c |

GOOD FOOD SUPER MART
LA 7-1111

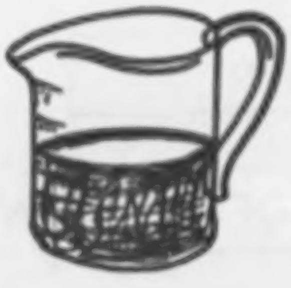
b

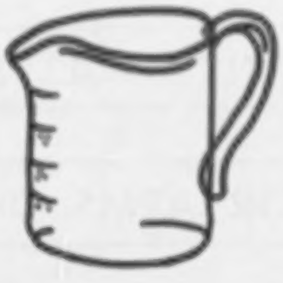
---

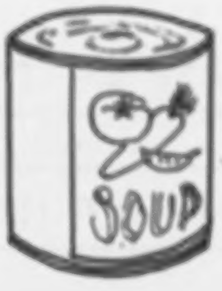
Bob is cooking. He reads the cookbook. It says:

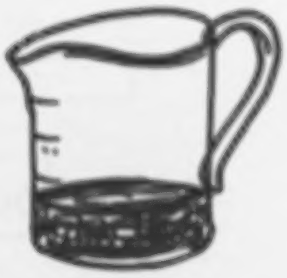
1 can of soup.
½ cup of milk.

Put an X on the picture that shows how much milk Bob will use.

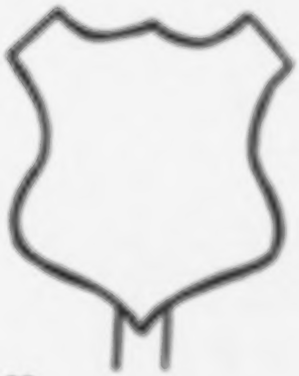


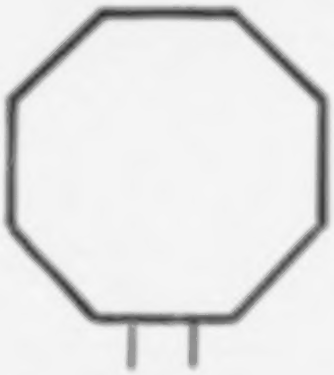


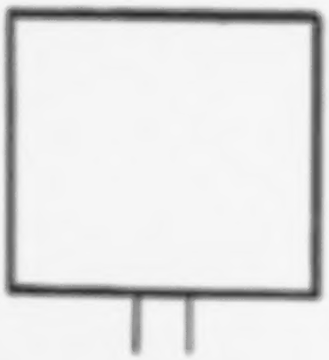


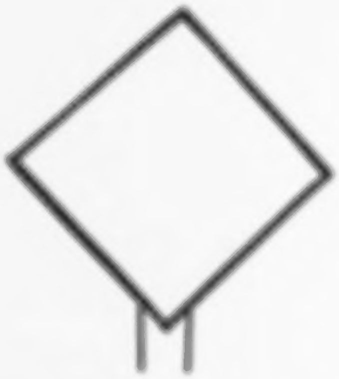


Put an X on the one that tells the driver of a car to STOP.



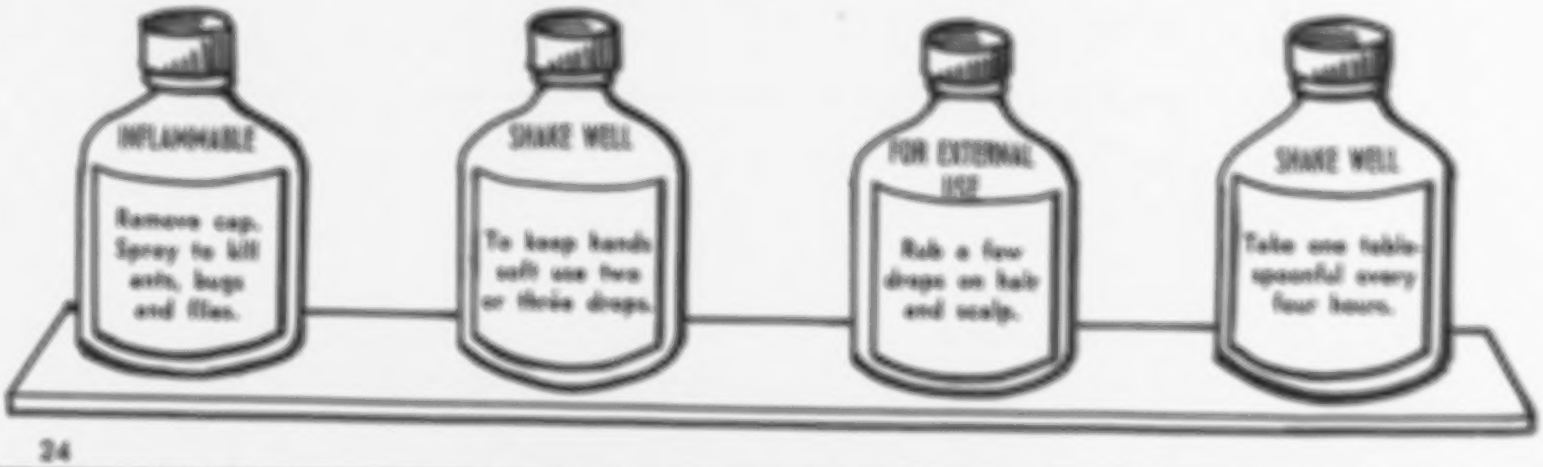






23

Mary is sick. Put an X on the one that may make her feel better.


INFLAMMABLE
Remove cap. Spray to kill ants, bugs and flies.
SHAKE WELL
To keep hands soft use two or three drops.
FOR EXTERNAL USE
Rub a few drops on hair and scalp.
SHAKE WELL
Take one tablespoonful every four hours.

24

Read the bill. Put an X on the date when the bill must be paid.

**SMITH and COMPANY**
**CHICAGO 83, ILLINOIS**

Mr. S. J. Green
1172 N. Lake Street
Chicago 10, Illinois

DUE on or before March 15, 1956

| | | |
|---|---|---|
| Jan. 31 | 1 suit | $ 15.50 |
| Feb. 15 | 1 pr. shoes | 6.25 |
| Feb. 28 | 1 long coat | 21.75 |
| | | $ 43.50 |

25

13

## TV PROGRAM

**Directions**

Look at the Television Program below.

Put an X on the Channel where you will find the Pop-Pop Show.

Put an X on the time you can see the Rancho and Poncho Program.

---

**WEDNESDAY**

**TV-PREVUE** **JAN. 22** **HOME NEWS**

---

**AFTERNOON**

Channel: 4:00 P.M.
2 — Captain Daytime
5 — The Jeanie Show
7 — The Zoo Parade
9 — Fun at Four

4:15 P.M.
5 — Miss Kay

4:30 P.M.
2 — Hello There
5 — Records
7 — Lady Lou
9 — Wild West Will

5:00 P.M.
2 — Teen Time
5 — Record
7 — Funny Films
9 — Kid's Quiz
11— Wide Wide Windows

5:30 P.M.
5 — The Pop-Pop Show
7 — Music
9 — Hip, Hop, Hop

**EVENING**

Channel: 6:00 P.M.
2 — News
5 — Sports Time
7 — News
9 — Rancho and Poncho
11— Around the World

6:30 P.M.
2 — Music Masters
5 — The Sheep Dog
7 — Sport News
9 — News and Weather
11— Around the World

6:45 P.M.
9 — Music

7:00 P.M.
2 — Music Masters
5 — Puppet Pals
7 — See and Win
9 — Quiz Show
11— Nature Walks

When you do not know the telephone number of a person, you may look in the Telephone Directory. Part of a directory is listed below. Your friend's name is John Walker. He lives at 1471 S. Maple St.

Put a line under the telephone number you will call to get John Walker.

| | | |
|---|---|---|
| Walker, J.P. | 5942 N. Chicago Ave. | WAbash 2-0555 |
| Walker, Jim | 6622 S. Stewart Ave. | GReen 3-4932 |
| Walker, John | 2471 S. Noble St. | CAlumet 1-2120 |
| Walker, John | 1471 S. Maple St. | UNion 4-3621 |
| Walker, John G. | 27 S. Yale Ave. | SOuth 8-8787 |
| Walke, M.J. | 1700 S. Maple Park | MAple 7-2020 |
| Wall, Pat | 1400 W. Green St. | UPton 8-9616 |

Dick has a newspaper. He wants to look for a job.

Put an X where he will look.

| EMPLOYMENT AGENCIES WOMEN | CLOTHING FOR MEN | HELP WANTED WOMEN | HELP WANTED MEN |
|---|---|---|---|
| Helping Hand Jobs<br>If you want a job see us now. Come ready for work. Part or full time day work.<br>Free Placement<br>Dick's Service<br>9050 W. Jones<br>WO 1-8419 | Boys and Men<br>Overcoats and short jackets<br>Heavy, fall colors<br>Come early for best selection.<br>The John's Store<br>7512 N. Ashland | Young Women<br>Nurses Aides<br>Excellent starting salary with increase in 3 months.<br>Will take beginners<br>The Chicago Hospital<br>1515 E. 35th St.<br>OAkpark 4-0030 | Boys, ages 16 to 18 with bicycles<br>North Side Area<br>Part or full time day work.<br>Continuation School boys included.<br>Bring Birth Certificate and Social Security Card.<br>Make-Rite Co.<br>6787 W. 22nd St. |

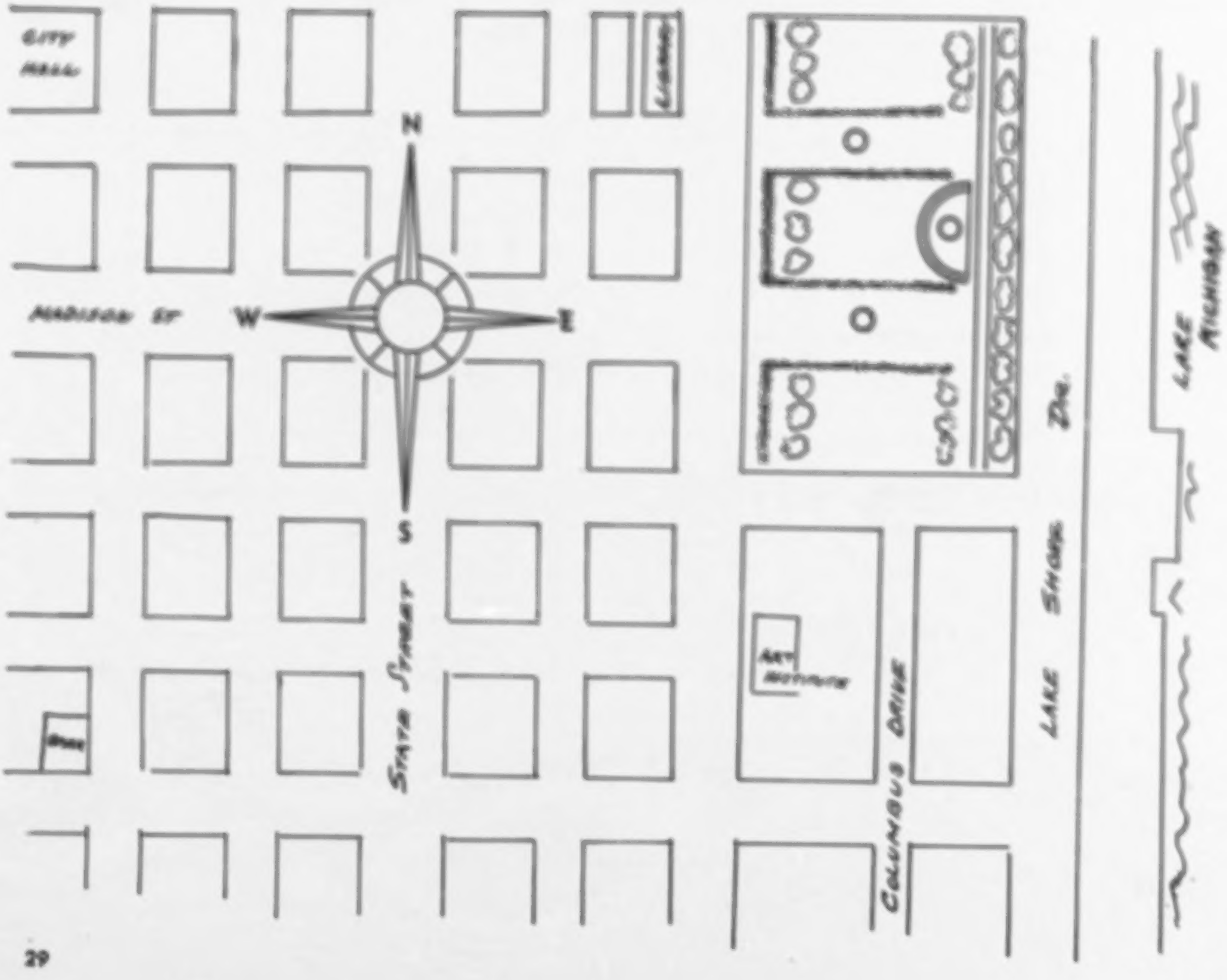
This map shows the center of Chicago. Some important buildings are on the map. The circle shows the center of the City at State Street and Madison Street.

Put a line under the correct word.

1. The City Hall is north south east west of Madison Street.

2. Lake Michigan is north south east west of State Street.

3. The bank is north south east west of State Street.


CITY HALL
LIBRARY
N
W
E
S
MADISON ST
STATE STREET
BANK
ART INSTITUTE
COLUMBUS DRIVE
LAKE SHORE DR.
LAKE MICHIGAN

Fill out the Identification Card below:

### IDENTIFICATION CARD

Name ______________________________

Street ______________________________

City ____________________ State ____________

Telephone No. ______________________________

In case of accident or serious illness please notify:

Name ______________________________

Address ______________________________

Telephone No. ______________________________

30

---

You are trying to get a job. Fill out the Work Application below:

### WORK APPLICATION

PLEASE PRINT

Name ______________________________
Last First

Address ______________________________
Number Street Telephone

City ____________________ Zone ________ State ____________

Birthdate ______________________________
Year Month Day

School Attended ______________________________

______________________________
Signature

Date ____________________

31

157

VL

# BRIEF SCREENING INSTRUMENTS FOR EVALUATING THE ACADEMIC SKILLS AND PERSONAL ADJUSTMENT OF EDUCABLE MENTALLY HANDICAPPED CHILDREN

Cooperative Research Project SAE 6529

BOARD OF EDUCATION
CITY OF CHICAGO
1961

# BRIEF SCREENING INSTRUMENTS FOR EVALUATING THE ACADEMIC SKILLS AND PERSONAL ADJUSTMENT OF EDUCABLE MENTALLY HANDICAPPED CHILDREN

Prepared in the Cooperative Research Project

of the Chicago Board of Education

| | |
|---|---|
| William Itkin | Frances A. Mullen |
| Director | Assistant Superintendent of Schools |
| Cooperative Research Project | in Charge of Special Education |

BENJAMIN C. WILLIS

GENERAL SUPERINTENDENT OF SCHOOLS

This publication is based on research performed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare.

Board of Education
of the
City of Chicago
Chicago, Illinois
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# BRIEF SCREENING INSTRUMENTS FOR EVALUATING THE ACADEMIC SKILLS AND PERSONAL ADJUSTMENT OF EDUCABLE MENTALLY HANDICAPPED CHILDREN

Part VI. of a six-part report on a series of researches on

## HOW MENTALLY HANDICAPPED CHILDREN LEARN UNDER CLASSROOM CONDITIONS

carried on under the terms of Cooperative Research Project No. SAE 6529, dated February 28, 1957, between the United States of America acting through the United States Commissioner of Education of the Office of Education, Department of Health, Education, and Welfare, and the Department of Public Instruction of the State of Illinois, to provide research through the facilities of the Board of Education of the City of Chicago.

Part

- I. Achievement and Adjustment of Educable Mentally Handicapped Children in Special Classes and in Regular Grades
- II. Teaching the Educable Mentally Handicapped Child: A Comparison of Four Methods of Instruction
- III. The Chicago Test of General Information and General Comprehension for Educable Mentally Handicapped Children: Manual and Report.
- IV. Personality Appraisal of Educable Mentally Handicapped Children: A System for Scoring and Interpreting Picture Story Tests
- V. The Chicago Cooperative Research Project Practical Reading Test "Every Day Reading for Fun and Meaning:" Directions for Administration and Scoring. Second Edition.
- VI. Brief Screening Instruments for Evaluating the Academic Skills and Personal Adjustment of Educable Mentally Handicapped Children.

This publication was based on research performed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare.

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## BOARD OF EDUCATION
City of Chicago

The plans for the present research were accepted and the contract with the U. S. Office of Education and the Illinois Department of Public Instruction approved by the Board of Education of the City of Chicago in 1957. Work could not have continued without the ongoing support of later boards who approved the research budget each year. The interest and support of the former and present members of the Board of Education is gratefully acknowledged.

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# BRIEF SCREENING INSTRUMENTS FOR EVALUATING THE ACADEMIC SKILLS AND PERSONAL ADJUSTMENT OF EDUCABLE MENTALLY HANDICAPPED CHILDREN

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# THE COOPERATIVE RESEARCH PROJECT

# WORD RECOGNITION TEST

**Lucille M. Barry and Eugene Richards**

**Cooperative Research Project, Chicago Board of Education**

**William Itkin**
**Director**
**Cooperative Research Project**

**Frances A. Mullen**
**Assistant Superintendent**
**of Schools in Charge of**
**Special Education**

**Benjamin C. Willis**

**General Superintendent of Schools**

**This publication was based on research performed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare.**

**Chicago Board of Education, 1961**

# The Cooperative Research Project Word Recognition Test [1]

Lucille M. Barry and Eugene Richards

Cooperative Research Project, Chicago Board of Education

## Uses and Limitations of Standardized Tests

Standardized tests have been designed to measure important knowledges, skills, and understandings commonly accepted as desirable outcomes of the school curriculum. They have been administered to thousands of school children in several grades in various parts of the country, and the normative data resulting therefrom reflect the actual accomplishment of pupils of varying ages and grades. Thus, persons concerned with the growth and development of school children are provided with objective measures of a child's performance which, together with subjective measures, are used in improvement of instruction, in pupil guidance, and in evaluation of progress.

Standardized test results, however, cease to be dependable measures of curriculum outcome under certain conditions; for example, (1) when the content of a test is so outmoded that it no longer represents what is actually being taught in the schools; (2) when the normative data no longer reflect the current accomplishment of school children; (3) when the level of the test administered to a particular child is either much too easy or much too difficult for him; (4) when the child being administered the standardized test is one whose kind has been excluded from the population upon which the test was standardized; e.g., a foreign language child who does not understand the language in which the test is written or in which instructions are given, a child belonging to an ethnic group that has been excluded from the standardization population, or one who so deviates either mentally or behaviorally from the type of child used in the standardization that his kind has been excluded from the standardizing population.

---

[1] The research reported herein was performed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare.
The Cooperative Research Project is under the general direction of Dr. Frances A. Mullen, Assistant Superintendent of Schools in charge of Special Education. Dr William Itkin is Project Director.

When an attempt is made, therefore, to measure the academic improvement of an educable mentally handicapped child over a period of time, existing standardized tests may be inadequate for establishing a child's status at the beginning of the measurement period, as well as for determining any improvement that has occurred during this time.

Since the mentally handicapped child must compete in the environment in which he finds himself, and this environment is usually one in which other children have mental abilities that exceed his own, the use of a standardized test with the educable mentally handicapped child will at least give an objective measure of his performance in terms of the grade level at which this performance obtained in the standardizing population. Moreover, the use of a standardized test on many educable mentally handicapped children will reveal the variability of their performance, so that the knowledges, skills, and understandings of one educable mentally handicapped child may be compared objectively with those of the other educable mentally handicapped children who were administered the standardized test. This, however, is true only of those educable mentally handicapped children whose performance has reached a level of accomplishment that is high enough to approximate that which prevailed in the graded classrooms on which the test was standardized. Consider all of those educable mentally handicapped children at the low end of the performance scale where, even though there is great variability in their knowledges, skills and understandings, these are at such a low level that they cannot be measured accurately by a standardized test. The efficient manipulation of a pencil is one prerequisite of the administration of the usual standardized test. The ability to understand the directions for the test is another.

When it is the educable mentally handicapped child's reading ability that is to be measured, and his progress in reading over a period of time is to be ascertained, some form of measurement other than the standardized test is in order for those children whose ability has not yet reached the level of performance necessary for the administration of a standardized reading test.

## Purpose of the Word Recognition Test

The Cooperative Research Project developed the Word Recognition Test to establish a definitive base of accomplishment in reading for those educable mentally handicapped children whose obtained scores on the primary battery of standardized reading tests were so low that their validity might be questioned. Moveover, since the growth in reading skills is so slow in educable mentally handicapped children, an instrument was needed that would reflect fine gradations of accomplishment in order that any improvement in the child's reading ability, however small, would be reflected in the score obtained on the test.

Further prerequisites of such a measuring instrument were :(1) It would have to be an oral, individually administered test, in order not to penalize a child who can not handle a pencil efficiently, or one who is not able to understand even the most simple instructions for marking a test paper with a pencil. (2) It should avoid the factor of guessing that is always present in the multiple-choice type of paper and pencil test. (3) It should be fair to all children throughout the City of Chicago, regardless of the basic texts that were being used in any particular school and regardless of the socio- economic status of the neighborhood in which the child lived or attended school. (4)Administration time would need to be short, since the attention span of these children is short. (5) The words presented would need to be in large type, since many of these children may never have seen type as small as elite or pica. (6) In the interest of economy, it would need to be a test that could be produced in the Cooperative Research Project office, and not one that required reporduction by a commercial printing establishment.

## Method of Construction

Children at the kindergarten level of reading learn to read and interpret pictures. They also begin to develop keen sensory perception, particularly visual perception, and they can determine likenesses and differences in form. At the pre-primer level they begin to acquire a basic sight vocabulary, which continues through the primer level, of those words which are common to the reading experiences used in the classroom and appearing in the pre-primers and primers. By the time they have reached Grade 1 level they are beginning to use word attack skills such as structural and phonetic analysis, along with context, picture, and configuration clues. Their basic sight vocabularies should have already been established before they begin such a word attack skills program. Although reading is a thoughtful process, and mere word recognition cannot be said to be reading, it nevertheless is true that a child who can read at a high first grade level, at least, is able to recognize most of the pre-primer and primer words and many of the words that have been introduced during the first half of the first reader in the basic series of readers he is using. This is because publishers of basic readers repeat the pre-primer words in the primers, the pre-primer and primer words in first readers, etc.

The construction of a word recognition test would satisfy the test prerequisites if a small, but representative, group of words from the pre-primer, primer, and first grade reading levels could be selected which would be fair to all Chicago pupils, regardless of the basic reading series they had encountered in their classrooms. Accordingly, from the Approved Text Book List for Language Arts Subjects, 1957, published by the Bureau of Instructional Materials, Board of Education, City of Chicago, the five publishers whose elementary reading texts had been approved for classroom use were identified, along with the names of the texts they published for these three reading levels. In addition, because of the wide use of another publisher's primary reading texts in special classes for educable mentally handicapped children, which are listed as auxiliary texts in the Approved Text Book List for Language Arts Subjects, 1957, a sixth publisher was identified and the names of the texts in this series obtained.

From these six publishers, the word content of four books at the kindergarten level, twenty-one at the pre-primer level, twelve at the primer level, and fifteen at the first grade level was itemized. This itemization of a total of fifty-two books yielded 2500 index cards, each specifying one word and identifying the book wherein it was first introduced in that one publisher's series of basic readers. By alphabetizing and sorting these index cards for duplications, it was found that the six publishers had introduced 804 different words in their total number of reading texts through the first grade reading level. Agreement as to which words would be introduced through this reading level was reached by as many as four or more of the six publishers on only 235 of the 804 words. All six publishers agreed on only 119 of these 235, and of these 119 words, 21 were one and two letter words, so that the six publishers agreed on only 98 of the total of 804 words, exclusive of one and two letter words. The six publishers used a total of 59 proper names in the 52 books, but only one proper name (Billy) was used by as many as four of the six publishers.

The 235 words agreed upon by as many as four of the six publishers were then categorized as to the reading level at which each of the four publishers first introduced the word. The word "cake", for instance, was used by four of the six publishers. One publisher introduced it at the pre-primer level, one at the primer level, and two at the first reader level. The word "and", on the other hand, was introduced by all six publishers at the pre-primer level. From this categorization, each of the 235 words was classified as to the reading level at which it was most commonly introduced by four, five or six publishers.

A list of the 235 words was then submitted to six reading experts [2] who were asked to use their judgment in selecting the fifteen most representative words at each of the three reading levels. A compilation of their selections showed the following agreement :

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[2] Max Engelhart, Director, Division of Student Examinations, Chicago Board of Education.
Lillian Fletcher, Psychologist, Bureau of Child Study, Chicago Board of Education.
Elizabeth Hill, Psychologist, Bureau of Child Study, Chicago Board of Education.
Lillian Marcus, Psychologist, Bureau of Child Study, Chicago Board of Education.
Maud C. Stubbings, First Grade Teacher, Hearst Elementary School, Chicago, Illinois.
Mary Zwikstra, Psychologist, Bureau of Child Study, Chicago Board of Education.

| Pre-Primer Words | Primer Words | First Reader Words |
|---|---|---|
| All 6 experts agreed on: | All 6 experts agreed on: | No word was chosen by 6 experts. |
| little | away | |
| look | blue | No word was chosen by 5 experts. |
| see | dog | 4 experts chose: |
| 5 experts chose: | funny | baby |
| ball | good | house |
| jump | red | pig |
| mother | something | 3 experts chose: |
| play | 5 experts chose: | milk |
| said | doll | one |
| 4 experts chose: | duck | 2 experts chose: |
| big | put | garden |
| go | they | going |
| run | yes | grandfather |
| you | | green |
| | | his |
| | | stop |
| | | them |

A total of twelve words were thus selected in each of the three reading levels by agreement of the reading experts. In the interest of brevity, however, it was considered sufficient to have the test consist of ten words in each of the three levels. A committee from the Cooperative Research Project staff therefore elected to omit the following words from the test:

| From the Pre-Primer Level | From the Primer Level | From the First Reader Level |
|---|---|---|
| big | duck | his |
| go | put | stop |

The Cooperative Research Project Word Recognition Test (Cont.)

The ten words in each category were thereupon listed in the above order, except for the two omissions in each, the pre-primer words listed first, the primer words next, and the first reader words last. The words were then numbered from 1 to 30. This sheet was used by the test administrator as a scoring sheet for each child tested.

For the children's use, each word was typed in ampli type on a separate 4 X 6 index card. A number was placed on the back of the card, this number corresponding to the number opposite the word on the scoring sheet. This made it easy for the examiner to put the cards back into proper order if they got out of order, and also made it possible for the examiner to identify the word being considered by the child. It also insured the presentation of the thirty words in the same order to each child tested.

## Downward Extension of the Word Recognition Test

Since the range of abilities of the educable mentally handicapped children to be tested in the Cooperative Research Project study would include those children who had not yet learned to recognize any word, possibly not even their own name, it was considered advisable to draft a Pre-Primary form of the Word Recognition Test to be administered to those children who could recognize five or fewer of the thirty words on the Word Recognition Test. For those children who were at such a rudimentary level of word recognition, the downward extension of the Word Recogntion Test would establish a level of visual perception ability.

The Pre-Primary Word Recognition Test was composed of three sections: one, geometrical figures, two, single capital letters, and three, single words. Each section contained five multiple-choice items, each item containing five choices. In each case four of the five items were identical, the fifth different. Instructions for each of the three sections of the test were oral, and were the same for all three sections.

## Test Administration

Word Recognition Test flash cards are presented individually to the child in consecutive order, from 1 to 30. The child is asked to tell the examiner what word is written on the card. On the Word Recognition Test scoring sheet, the child's response is recorded immediately on the line following the word, the examiner recording a plus sign if the child's response is correct, a minus sign if he refuses to respond to a word, and the actual word given by the child if he responds with an incorrect word. The exact recording of responses can be used for determining whether the child has difficulty with initial consonants or ending consonants, whether he gives a different word from the one presented, or whether he gives no response at all.

At the conclusion of the child's responses to the thirty Word Recognition Test flash cards, the examiner immediately totals the number of correct responses and places this number in the upper left hand corner of the record sheet. If the child gives five or fewer correct responses to the thirty cards, he is shown the first line of the Pre-Primary Word Recognition Test , the examiner covering the remainder of the sheet with a piece of paper. The examiner points to the first line of geometric figures, moving a finger across the line from left to right, and says to the child, "Put an 'X' on the thing that is different-- that does not look like the others." In the event the child is unable to manipulate a pencil efficiently, the examiner changes the instructions to, "Pick out the thing that is different-- that does not look like the others." When the child points to his choice, the examiner marks his selection with an "X". Each succeeding line is presented to the child one at a time until all five lines in each of the three sections of the test are presented. The examiner then scores each subtest and records the total score of the subtests in the upper left hand corner of the scoring sheet.

A perfect score on the Word Recognition Test is 45, obtained by a child who is able to recognize all of the 30 words presented to him on the flash cards. A child who knows as many as 6 of these 30 words is given credit for the Pre-Primary Form. He is not asked to complete the 15 exercises of the Pre-Primary Form, it being assumed that if his word recognition ability has reached this high a level, his visual perception skills would have been developed to the extent that he would have been able to execute the Pre-Primary Form without error. If, on the other hand, the child recognizes fewer than 6 of the 30 words, he is asked to complete the Pre-Primary Form. Thus, his total scores for the test could range from 0 to 20.

### Test Validation

The total scores obtained on the Word Recognition Test by children tested in the Cooperative Research Project experiments were validated against scores on Average reading of the Stanford Achievement Test, the Gray Oral Reading Paragraphs Test, Metropolitan Reading Readiness Test, and the Primary Form of the Cooperative Research Project Practical Reading Test.

Table 1 gives the coefficients of correlation obtained between the Word Recognition Test and these four criterion measures, as well as the source of the data from which these coefficients were obtained, and the number of cases involved in each study.

Insert Table 1 about here

### Reliability

The split-half reliability coefficient, corrected for attenuation, for 91 cases of the Matched-Pair Experiment with Average Reading scores on the Stanford Achievement Test of 1.9 or below, who scored above five words on the Word Recognition Test was .92. For 26 cases scoring below five on the Word Recognition Test who were given the Pre-Primary Form, the split-half reliability coefficient, corrected for attenuation was .94.

Table 1

Validity Study of the Cooperative Research Project

Word Recognition Test

| Criterion Measure | Data Obtained From | N | $r_t$ |
|---|---|---|---|
| Average Reading, Stanford Achievement Test | Matched-Pair Experiment, first test data, Stanford Scores 1.0 -1.9 only. | 144 | .66 |
| Average Reading, Stanford Achievement Test | Methods Experiments, first test data, Stanford Primary only. | 349 | .86 |
| Gray Oral Reading Paragraphs Test | Methods Experiments, first test data, scores below 2.5 on Stanford Reading. | 238 | .93 |
| Metropolitan Reading Readiness | Matched-Pair Experiment, first test data | 28 | .45 (r) |
| Cooperative Research Project Practical Reading Test, Primary | Methods Experiments | 172 | .73 |

## Summary

This paper reports upon the construction, validity, and reliability of the Cooperative Research Project Word Recognition Test. The Cooperative Research Project Word Recognition Test was developed for the purpose of measuring fine gradations in reading achievement at the first grade level, where, especially for educable mentally handicapped children, multiple choice type of standardized reading achievement tests possess questionable validity. Data presented in this paper indicates that the Word Recognition Test possesses high reliability and satisfactory validity. Tetrachoric correlations between the Word Recognition Test and average reading on the Stanford Achievement Test, oral reading, as measured by the Gray Oral Paragraph Reading Test, and the Chicago Cooperative Research Project Practical Reading Test, ranged from .66 to .93. The magnitude of the validity coefficients obtained was related to the heterogeneity of reading ability in the samples upon which these correlations were based. When the range reading ability was restricted to the 1.0 to 1.9 level, a correlation of .66 was obtained between average reading on the Stanford and the Word Recognition Test. When the range of reading ability was extended to include all subjects given the primary level of the Stanford Achievement Test, a correlation of .86 was obtained; and for subjects scoring below 2.5 on Stanford Reading, a correlation of .93 was obtained between the between the Gray Oral Paragraph Reading Test and the Word Recognition Test. The present study was based on the use of the Word Recognition Test with educable mentally handicapped children. It is believed, however, that on the basis of the findings reported in this paper, the Word Recognition Test has demonstrated its usefulness as an instrument to measure progress in reading ability at the beginning reading level.

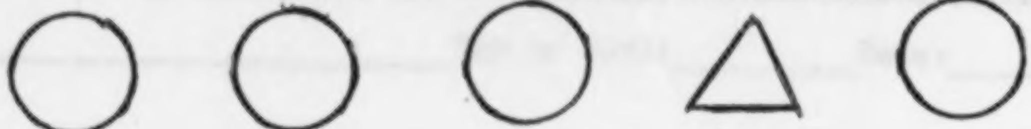
Cooperative Research Project
Chicago Board of Education

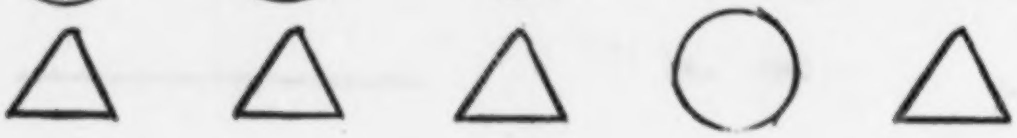
## PRE-PRIMARY WORD RECOGNITION TEST

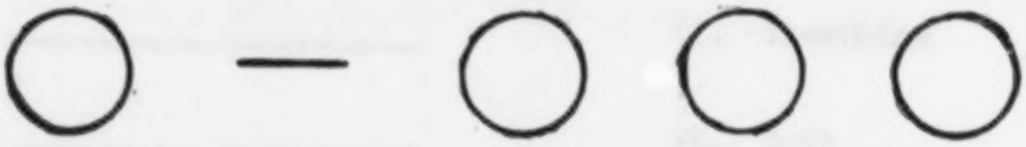
**Name:** ______________________ **Grade:** ________ **Age:** ________ **Case No.** ________

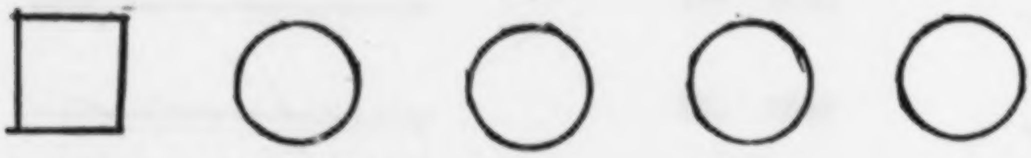
**School** ______________________ **Boy or Girl:** ________ **Date:** ____________

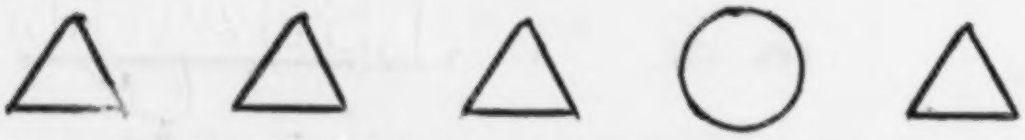
I. Put an "X" on the thing that is different --that does not look like the others.

1.


2.


3.


4.


5.


II. Put an "X" on the letter that is different --that does not look like the others.

| | | | | | |
|---|---|---|---|---|---|
| 1. | A | A | ∀ | A | A |
| 2. | I | H | I | I | I |
| 3. | B | B | ꓭ | B | B |
| 4. | C | Ɔ | C | C | C |
| 5. | E | Ш | E | E | E |

III. Put an "X" on the word that is different --that does not look like the others.

| | | | | | |
|---|---|---|---|---|---|
| 1. | GO | GO | OG | GO | GO |
| 2. | BIG | GIB | BIG | BIG | BIG |
| 3. | PUT | PUT | PUT | TUP | PUT |
| 4. | DUCK | CUDK | DUCK | DUCK | DUCK |
| 5. | STOP | STOP | SOPT | STOP | STOP |

Chicago Board of Education
Cooperative Research Project

## WORD RECOGNITION TEST

Name: ____________ Grade: ____________ Age: ______ Case No. ______

School: ____________ Boy or Girl: ________ Date: ________ Date: ________

1. little ____________
2. look ____________
3. see ____________
4. ball ____________
5. jump ____________
6. mother ____________
7. play ____________
8. said ____________
9. run ____________
10. you ____________
11. away ____________
12. blue ____________
13. dog ____________
14. funny ____________
15. good ____________
16. red ____________
17. something ____________
18. doll ____________
19. they ____________
20. yes ____________
21. baby ____________
22. house ____________
23. pig ____________
24. milk ____________
25. one ____________
26. garden ____________
27. going ____________
28. grandfather ____________
29. green ____________
30. them ____________

# THE CHICAGO ADJUSTMENT RATING SCALES

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**Cooperative Research Project, Chicago Board of Education**

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**This publication was based on research performed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare.**

**Chicago Board of Education, 1960**

# The Chicago Adjustment Rating Scales [1]

William Itkin

Cooperative Research Project, Chicago Board of Education

The Chicago Adjustment Rating Scales were developed in the Bureau of Child Study of the Chicago Board of Education during the 1955-56 school year. They were developed to meet the need for a simple instrument which could be used as a screening measure to select children in need of psychological services and as an evaluation instrument to determine the effectiveness of psychological services or of instructional programs. They were devised for use with elementary school children of grades 3 through 8.

## Construction of the Adjustment Rating Scales

In constructing the Adjustment Rating Scales, the problem was to develop an instrument which would be quick, valid, reliable, and inexpensive. An effort was made to identify factors tapping important facets of a child's adjustment which teachers are in a position to observe, which apply to all pupils, and which can be described in objective terms. The four factors selected were: Over-all Classroom Work, Over-all Classroom Behavior, Adjustment to Other Children and Social Participation. Other factors such as Frustration Tolerance, Emotional Control and Self-Confidence were considered important, but were not used because it was not thought that teachers were in sufficiently good positions to make observations relative to them.

Rating scales were devised for these four factors, with positions on each scale described, insofar as possible, in objective terms. Although the use of items requiring judgments, such as "Creative in carrying out assignments," were not completely avoided, most of the items were based upon observable behavior. Examples of such items were: "Wastes time; fails to complete work,""Accepts regulations, occasionally violating minor rules,""Generally disliked or rejected by group." Members of the staff of the Bureau of Child Study contributed to the development of the scales by suggesting and criticizing items.

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[1] The research reported herein was performed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare.
The Cooperative Research Project is under the general direction of Dr. Frances A. Mullen, Assistant Superintendent of Schools in charge of Special Education. Dr. William Itkin is Project Director.

A preliminary form of the Adjustment Rating Scales was tried out on approximately 500 students at two schools, one, a school on the northern periphery of the city, in an above average socio-economic community, and the second school in a low socio-economic area approximately two miles north and two miles west of the Loop. In presenting the rating task to the teachers cooperating in the try-out of the preliminary scales, the following questions were asked:

"1. Are the factors we have chosen important ones in assessing adjustment?

"2. Only four factors were chosen for reasons of economy of time. Have the most important four factors been chosen?

"3. Should any factors be added, or should any of the factors in the rating scales be replaced?

"4. Do these factors adequately describe a pupil's adjustment as a teacher is able to observe it? For example, degree of emotional control and frustration tolerance are important, but do teachers have sufficiently good opportunities to observe them enough to assess them?

"5. Do the particular statements included under each factor, i.e., the statements anchoring the positions on each scale, adequately describe the students being rated? If not, please describe the student's adjustment on that scale in the room provided for additional comments on the reverse side of this sheet.

"6. Do the ratings given the student on the four factors adequately describe his adjustment as the teacher has had a chance to observe it? If not, please elaborate by using the space under "Other Observations" on the reverse side of the rating sheet."

On the basis of reactions to the preliminary form of the Adjustment

Rating Scales which were received from the participating teachers, revised forms of the scales were developed.[2] The four factors in the preliminary edition of the scales were retained, but changes and additions were made in the items defining the positions on the scales. Two forms of the final revision of the Adjustment Rating Scales were prepared. The forms were identical with the exception of the scale on Adjustment to Other Children. Form 1 had seven items on this scale, while Form 2 had five. The two items on Form 1 which were not included on Form 2 were, "Has a few well adjusted friends" and "Has a few friends who are not well adjusted." There was some difference of opinion as to whether these two items described a child's social adjustment or that of his friends. It was decided to use both forms of the scales in a normative study and to make an effort to determine whether these two items were pertinent to the scale on Adjustment to Other Children.

## Standardization

Four schools participated in a standardization of the Adjustment Rating Scales in May, 1956. The schools were selected on the basis of school size and of the socio-economic status of the communities which they served. At the time of standardization of the scales, there were 352 elementary schools in Chicago, ranging in enrollment from 217 to 3128. Median enrollment was 771, Q1 599, and Q3 1067. In view of the skewness of the distributions of school size, the decision was made to select one small school, enrollment 520; one average size school, enrollment 754; one school close to Q3 in enrollment, with an enrollment of 1111, and one very large school, with an enrollment of 2492. The small school was in a low average to low socio-economic area, the second in an area of average socio-economic status for the city, and the third in an area of relatively high socio-economic status for the city. The fourth school, the largest, was taken from an area of very low socio-economic status, since most of the city's largest elementary schools were located in low socio-economic areas. Thus, an attempt was made to obtain representativeness of sample by using schools of different size and of different socio-economic conditions. Adjustment Rating Scales were made out by teachers of one grade each from grades 3 through 8 in each of the four schools. [3]

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[2] Acknowledgement is made of the participation of Dr. Kenneth W. Lund and Mrs. Dorothy Page, then Director and Supervisor of the Bureau of Child Study, respectively, in the development of the Adjustment Rating Scales.

Appreciation is also expressed for the participation of Miss Mildred Minogue, Principal, and the staff of the Armstrong Elementary School, and of Mrs. Aileen C. Norton, Principal, and the staff of the Burr Elementary School in the revision of the preliminary edition of the Adjustment Rating Scales.

Insert Table 1 about here

Table 1 shows distributions of children of grades 3 through 8 for the four schools according to sex. In each classroom, half of the pupils were rated on Form 1 of the Adjustment Rating Scales and the other half were rated on Form 2. The particular form used was determined by chance. These ratings were made during May, 1956.

## Development of a Scoring System

Forty-seven Bureau of Child Study psychologists participated in a project to determine weights to be assigned to the different positions on the rating scales. At random, approximately half of the psychologists were given envelopes containing sets of statements from two of the rating scales in scrambled order and half of the psychologists were given envelopes containing items from the other two rating scales. The psychologists ranking the items on the first two scales were given the following instructions: "In this envelope are two sets of statements from our Adjustment Rating Scales, one with eight statements and one with six. The eight statements relate to the factor Over-all Classroom Work; the six to the factor Over-all Classroom Behavior. As the statements were placed on the rating scale, they were not necessarily in correct order from highest rating to lowest rating on these factors. To determine what the correct order should be, we are asking a sample of our psychologists to place these statements in order from highest rating to lowest. Please write "one" in back of the statement which you feel belongs first, "two" second, and so on for each factor. Please do this independently without checking your opinion with that of any other psychologist, and do not deliberate more than five minutes on the task." Similar instructions accompanied the statements belonging to the rating scales on the Adjustment to Other Children and Social Participation. Twenty -five psychologists ranked the statements on Over-all Classroom Work, twenty-four on Over-all Classroom Behavior, twenty-two on Adjustment to Other Children, and twenty-two on Social Participation.

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[3] Appreciation is expressed for the participation of the principals and teachers of the following schools in the standardization of the Adjustment Rating Scales:
Budlong School, Mr. Edward Finston, then Principal
Pickard School, Miss Marion Fischer, then Principal
Falconer School, Mr. Paul T. Wallgren, then Principal
Penn School, Miss Gladys Falahey, then Principal

Insert Table 2 about here

Table 2 shows the mean ranks assigned the items of the four rating scales by the Bureau of Child Study Psychologists.

The mean ranks were converted to approximate equivalent ranks in the following manner: Adjacent positions on a scale were considered equivalent if the mean ranks assigned to them by the rating psychologists differed less than four-tenths of a rank. This was done in order to avoid giving disproportionate weight to items differing only slightly in rank order in the opinions of the ranking psychologists. The equivalent rank orders thus assigned to the items belonging to each of the four scales are shown on Table 2. Tentative weights were assigned to the positions on each of the rating scales. On the basis of the equivalent rankings, final weighted scores were assigned to the items on each scale from the distributions of rankings given interms of PE intervals, as follows:

Weighted scores of three were assigned to positions occuring within one probable error of the means of their distributions; weighted scores of 4 to positions between plus 1 PE and plus 2 PE; weighted scores of 5 for positions between plus 2 PE and plus 3 PE; weighted scores of 2 for positions between minus 1 PE and minus 2 PE; weighted scores of 1 for positions between minus 2 PE and minus 3 PE; weighted scores of 0 for positions between minus 3 PE and minus 4 PE; and weighted scores of minus 1 for positions more than 4 PE below the means of their distributions. Table 3 gives the means and probable errors of the Adjustment Rating Scale tentative weight scale scores.

Insert Table 3 about here

Table 4 shows how the weighted scores that were assigned to each position on the Adjustment Rating Scales were derived from positions within their respective distributions. The scoring keys for the Adjustment Rating Scales, as thus derived, are given in Table 5.

Insert Tables 4 and 5 about here

### Validity and Reliability

In a preliminary effort to obtain evidence of the validity of the Adjustment Rating Scales, the files of the Bureau of Child Study were inspected for the purpose of identifying all of the children in the standardization group who had ever been referred to and tested by the Bureau of Child Study. Thirty-seven such cases were located. The means of the weighted scores of the four adjustment rating scales of the tested group were compared with the means of the total standardization group. Table 6 provides a comparison of the mean scores of the standardization group and of the sample of that group seen by the Bureau of Child Study.

Insert Table 6 about here

All four means for the tested group were more than one probable error below the mean of the standardization group. The weighted scores on each rating scale were dichotomized at 3, and the referred group and non-referred group compared with respect to number of scores of 3 and above and of 2 and below, and phi coefficients computed. Significant differences in favor of the non-referred group were found on all four scales. These differences are reported in Table 7.

Insert Table 7 about here

In a second validity study, all elementary school children from grade three or age eight up, seen in the Bureau of Child Study during the calendar month of May, 1956, including reading diagnostic cases and cases of children with behavior problems or academic deficiencies, had adjustment rating scales made for them by their classroom teachers. Each psychologist was given a supply of Adjustment Rating Scales in which forms I and II were alternated. Psychologists were instructed to request teachers to rate every child, and if a child were new to her classroom, to rate him the best she could and to mark the scale "Validity Questioned". The mean for 259 cases seen at the Bureau of Child Study during the month of May, 1956 who had IQ's of 80 and above was 8.965 compared to a mean of 12.14 for 835 cases of the standardization group who had never been tested by the Bureau of Child Study. A $t$ of 12.23, significant beyond the one per cent level, was obtained for the differences in the means between these groups. When the Adjustment Rating Scale scores for May referrals and the non-tested cases of the standardization group were arranged in seven intervals and a contingency coefficient computed, an uncorrected coefficient of contingency of .38 was obtained. For this data, the comparable $r_t$ was .56.

### Reliability

In Jan., 1957, teachers of the schools which had participated in the standardization experiment were asked to rerate every fifth child who had been rated in May, 1956.[4] One hundred twenty ratings were obtained. The test-retest reliability for these ratings was .58. The split-half reliability coefficients for the two odd numbered ratings versus the two even numbered ratings, corrected for attenuation by the Spearman-Brown formula, were .84 for 441 boys and .81 for 457 girls of the standardization group.

## The Adjustment Rating Scales in a Study of Educable Mentally Handicapped Children

### Reliability

The Bureau of Child Study cases with Stanford-Binet IQ's below 80 who had been rated by their teachers in May, 1956, were followed up in May, 1957, with Adjustment Rating Scales. For 63 cases rated in May, 1956, and rerated in May, 1957 who remained in their respective placements, a test-retest correlation of .53 was obtained. The mean Adjustment Rating Scales scores for these subjects in May, 1956, and May, 1957, were .925 and .965, respectively. For 50 Bureau of Child Study cases with IQ's below 80 rated in May, 1956, and rerated in 1957 who transferred from regular grades to special divisions, a test-retest correlation of .14 was obtained. The means for the 1956 and May, 1957 cases were 8.86 and 11.20, respectively. The test-retest correlation for 150 EMH cases rated in May, 1956, and rerated in May, 1957, including those who changed and those who did not change placement was .36. In Methods Experiments conducted by the Cooperative Research Project, 180 pupils in fourteen EMH classrooms were rated by their teachers in March, 1958, and were rerated by the same teachers in June,1958. An intra-class test-retest correlation of .71 for these 180 pupils was obtained.

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[4] Dr. William M. Canning, Director of the Bureau of Child Study, participated in the test-retest reliability study.

### Validity

In May, 1957, the Adjustment Rating Scales were made out by teachers of 263 educable mentally handicapped pupils, ages 6 to 17, and IQ's 50 to 74, inclusive, in a preliminary study carried out by the Cooperative Research Project. The sample included 165 boys and 98 girls, 166 children placed in special divisions, and 97 children in regular grades. The mean chronological age of the children in regular grades was 12.04, with a standard deviation of 2.35, and the mean chronological age of the children placed in EMH divisions was 12.11 with a standard deviation of 2.13. Teachers who filled out the Adjustment Rating Scales for the students in this study also filled out Haggerty-Olsen Wickman Adjustment Rating Schedules, Form B. A product-moment correlation of .69 was obtained between the Chicago Adjustment Rating Scales and Haggerty-Olsen-Wickman Adjustment Rating Schedules(Mullen, Itkin , and Brauer 1959).

In the Matched-Pair Experiment,conducted by the Cooperative Research Project, pupils were rated by their teachers on the Adjustment Rating Scales, and at the same time staff examiners, who worked with each subject for at least one full day, recorded their evaluation of each child's adjustment by categorizing him in one of five categories: (1) Well-Adjusted, (2) Passive, (3) Hyperactive , (4) Active-Hostile, and (5) Passive-Hostile. Although the Examiners' Adjustment Categorization is not considered a sufficient criterion of concurrent validity,it is believed that a meaningful relationship between Adjustment Rating Scale scores and Examiner Categorizations may be required as evidence of construct validity of the scales.

It was hypothesized that the mean Adjustment Rating Scale scores of the subjects categorized by examiners as Well-Adjusted should be higher than the mean Adjustment Rating Scale scores of those categorized either Active-Aggressive or Passive-Aggressive; that the mean Adjustment Rating Scale score of those categorized Well -

Adjusted should be higher than the means of those categorized Passive or Hyperactive, and that, in turn, the mean Adjustment Rating Scale scores of those categorized Passive or Hyperactive should be higher than the mean Adjustment Rating Scale scores of those categorized Active-Aggressive or Passive-Aggressive.

Table 8 presents a comparison of the mean Adjustment Rating Scale scores received by EMH children in special divisions and in regular grades who were given the same adjustment categorizations by Cooperative Research Project staff examiners. The mean Adjustment Rating Scale scores of the subjects categorized Well-Adjusted were also compared by analysis of variance with the means of those categorized (a) either Active-Hostile or Passive-Hostile and (b) either Passive or Hyperactive. For the graded EMH children, the difference between the means of the children categorized Well-Adjusted and those categorized either Active-Hostile or Passive-Hostile was significant at the one per cent level of confidence. For the EMH children placed in special divisions, the differences in Adjustment Rating Scale scores of those categorized Well-Adjusted and those classified (a) either Active-Hostile or Passive-Hostile and (b) either Passive or Hyperactive were both significant at the one per cent level.

Insert Table 8 about here

These data are in essential agreement with the hypothesis and give support to the claim of construct validity for the Adjustment Rating Scales.

The data in Table 8 suggest that Adjustment Rating Scale scores are influenced by the frame of reference of the teachers doing the ratings. The ratings of the special division children were consistently higher than the ratings of children of comparable IQ placed in regular grades who received the same adjustment categorizations from staff examiners. Two alternative hypotheses may explain these differences. One explanation might be that regular grade teachers, comparing the adjustment of EMH children in their classrooms with average children, tend to rate their adjustment lower than EMH division teachers who compare them from the frame of reference of a class of their retarded peers. A second explanation might be that EMH children of essentially similar personality adjustment do in fact behave better and adjust better to other children in a special division than they do in a regular grade.

In an effort to obtain evidence relative to these two hypotheses, Adjustment Rating Scale scores of special class and regular grade EMH children were compared with Sociometric Interview scores. For the same levels of scores on the Sociometric Interview, special class children received consistently higher Adjustment Rating Scale scores from their teachers than regular grade children. (Table 9) These findings support the hypothesis that Adjustment Rating Scale scores are influenced by frame of reference of teachers, but do not disprove the alternate hypothesis that EMH children may also adjust better on an overt level in special classrooms than in regular grades. Further evidence on this question is needed.

Insert Table 9 about here

The influence of frame of reference of teachers upon Adjustment Rating Scale scores, although impairing the usefulness of this instrument as an evaluation measure for comparing the adjustment of educable mentally handicapped children in special classes with those in regular grades, enhances its usefulness as a screening measure. As the data in Table 10 show, educable mentally handicapped children in regular classrooms who received below median scores on the Adjustment Rating Scale and, in particular, on Over-all Classroom Work, had a 2 to 1 likelihood of making very slow academic progress during the following year. Because of the leniency of special class teachers in making adjustment ratings, such predictions could not be made for special class children.

Insert Table 10 about here

Over-all, significant relationships were found between the achievement of educable mentally handicapped children and their scores on Adjustment Rating Scales. These relationships are shown in Table 11.

Insert Table 11 about here

## Summary

This paper has reported on the construction, reliability, and validation of the Chicago Adjustment Rating Scales.

The split-half reliability for more than 400 boys and girls of the standardization sample were .84 and .81, respectively. Test-retest reliability over a three-month interval for ratings made by the same special class teachers was .71. For regular class pupils of the standardization group, the test-retest reliability over an eight-month interval was .58. For educable mentally handicapped children remaining in the same placement, the test-retest correlation over a one-year interval was .53. Test-retest reliability over a one-year interval for educable mentally handicapped children changing placement from special classes to regular grades or from regular grades to special classes was very low, however. A product-moment correlation of .69 was found between the Adjustment Rating Scales and the Haggerty-Olson-Wickman Adjustment Rating Schedule B.

Data were presented indicating that Adjustment Rating Scale scores are influences by frame of reference of teachers. Teachers of special classrooms for educable mentally handicapped children were found to rate EMH children more leniently than regular grade teachers having educable mentally handicapped children in their classrooms. Data on construct validity of the Adjustment Rating Scales presented in this paper demonstrate the usefulness of this instrument as a screening measure.

## References

Mullen, Frances A. Itkin, W. and Brauer, I., Personality and social background factors related to the achievement and adjustment of educable mentally handicapped children. A report on a preliminary study. American Journal of Mental Deficiency, 1959, 63, 1046-1058.

## Table 1

### Sex Distribution of Standardization Sample

| School | Socio-Economic Status | Enrollment | Boys Form I | Boys Form II | Girls Form I | Girls Form II |
|---|---|---|---|---|---|---|
| A | Above Average | 1111 | 53 | 60 | 64 | 53 |
| B | Average | 754 | 56 | 58 | 48 | 43 |
| C | Low Average to Low | 520 | 55 | 55 | 57 | 62 |
| D | Low | 2492 | 51 | 51 | 63 | 66 |
| | | | 215 | 224 | 232 | 224 |

## Table 2

### Determination of Equivalent Rank Orders of Items on Adjustment Rating Scales as Based upon Rankings of Bureau of Child Study Psychologists.

| Scale and Item | Number of Psychologists | Mean Ranks Assigned | Equivalent Rank Order | Tentative Weights Form I | Form II |
|---|---|---|---|---|---|
| **Over- all Classroom Work** | | | | | |
| a | 25 | 1.28 | 1 | 6 | 6 |
| b | 25 | 2.0 | 2 | 5 | 5 |
| c | 23 | 3.04 | 3 | 4 | 4 |
| d | 25 | 4.84 | 4.5 | 3 | 3 |
| e | 25 | 4.64 | 4.5 | 3 | 3 |
| f | 25 | 6.36 | 6.5 | 2 | 2 |
| g | 25 | 6.48 | 6.5 | 2 | 2 |
| h | 25 | 7.25 | 8 | 1 | 1 |
| **Over-all Classroom Behavior** | | | | | |
| a | 24 | 1.17 | 1 | 5 | 5 |
| b | 24 | 2.62 | 3 | 4 | 4 |
| c | 24 | 2.21 | 2 | 3 | 3 |
| d | 24 | 4.58 | 4.5 | 2 | 2 |
| e | 24 | 4.46 | 4.5 | 2 | 2 |
| f | 24 | 5.96 | 6 | 1 | 1 |
| **Adjustment to Other Children** | | | | | |
| a | 22 | 1.36 | 1 | 7 | 5 |
| b | 22 | 1.82 | 2 | 6 | 4 |
| c | 22 | 3.23 | 3 | 5 | |
| d | 22 | 5.09 | 5 | 3 | |
| e | 22 | 4.14 | 4 | 4 | 3 |
| f | 22 | 5.59 | 6 | 2 | 2 |
| g | 22 | 6.95 | 7 | 1 | 1 |
| **Social Participation** | | | | | |
| a | 22 | 1.14 | 1 | 6 | 6 |
| b | 22 | 2.14 | 2 | 5 | 5 |
| c | 22 | 3.27 | 3 | 4 | 4 |
| d | 22 | 3.77 | 4 | 3 | 3 |
| e | 22 | 6.36 | 5.5 | 2 | 2 |
| f | 22 | 6.68 | 7.5 | 1 | 1 |
| g | 22 | 6.1 | 5.5 | 2 | 2 |
| h | 22 | 6.73 | 7.5 | 1 | 1 |

## Table 3

## Means and Probable Errors of Adjustment Rating Scale

## Tentative Weight Scale Scores

| Scale | Boys | | Girls | |
|---|---|---|---|---|
| | Mean | P.E. | Mean | P.E. |
| Over-all Classroom Work<br>Forms I & II | 2.40 | .9 | 3.21 | .82 |
| Over-all Classroom Behavior<br>Forms I & II | 2.41 | .89 | 3.19 | .76 |
| Adjustment to Other Children<br>Form I | 4.44 | 1.17 | 4.93 | 1.03 |
| Adjustment to Other Children<br>Form II | 3.01 | .79 | 3.00 | .81 |
| Social Participation<br>Forms I & II | 2.81 | 1.11 | 3.33 | 1.27 |

## Table 4

### Determination of Weighted Scores on Adjustment Rating Scales

| Boys | | | | | Girls | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Item | PE Interval | Weighted Score | f | % | Item | PE Interval | Wtd Score | f | % |
| Over-all Classroom Work (N=429) | | | | | (N=456) | | | | |
| a | +2 PE to +3 PE | 5 | 20 | 5 | a | +2 PE to +3 PE | 5 | 44 | 10 |
| b | +1 PE to +2 PE | 4 | 89 | 20 | b,c | -1 PE to +1 PE | 3 | 275 | 60 |
| c,d,e | -1 PE to +1 PE | 3 | 203 | 47 | d,e | -2 PE to -1 PE | 2 | 90 | 20 |
| f,g | -2 PE to -1 PE | 2 | 84 | 19 | f,g | -3 PE to -2 PE | 1 | 38 | 8 |
| h | -3 PE to -2 PE | 1 | 33 | 8 | h | -4 PE to -3 PE | 0 | 9 | 2 |
| Over-all Classroom Behavior (N=438) | | | | | (N=456) | | | | |
| a | +1 PE to +2 PE | 4 | 132 | 30 | a | +1 PE to +2 PE | 4 | 266 | 58 |
| b,c | -1 PE to +1 PE | 3 | 181 | 41 | c | -1 PE to +1 PE | 3 | 56 | 12 |
| d,e | -2 PE to -1 PE | 2 | 90 | 21 | b | -2 PE to -1 PE | 2 | 95 | 21 |
| f | -3 PE to -2 PE | 1 | 35 | 8 | d,e | -3 PE to -2 PE | 1 | 34 | 7 |
| | | | | | f | -5 PE to -4 PE | -1 | 5 | 1 |
| Adjustment to Other Children Form 1 (N=215) | | | | | (N=232) | | | | |
| a | +1 PE to +2 PE | 4 | 70 | 33 | a | +1 PE to +2 PE | 4 | 110 | 47 |
| b,c | -1 PE to +1 PE | 3 | 94 | 44 | b,c | -1 PE to +1 PE | 3 | 90 | 39 |
| e | -2 PE to -1 PE | 2 | 11 | 5 | e | -2 PE to -1 PE | 2 | 8 | 3 |
| d,f | -3 PE to -2 PE | 1 | 33 | 15 | d | -3 PE to -2 PE | 1 | 6 | 3 |
| | | | | | f | -4 PE to -3 PE | 0 | 14 | 6 |
| g | -4 PE to -3 PE | 0 | 7 | 3 | g | -5 PE to -4 PE | -1 | 4 | 2 |
| Adjustment to Other Children Form 2 (N=224) | | | | | (N=223) | | | | |
| a | +1 PE to +2 PE | 4 | 86 | 38 | a | +1 PE to +2 PE | 4 | 84 | 38 |
| b | -1 PE to +1 PE | 3 | 91 | 41 | b | -1 PE to +1 PE | 3 | 89 | 40 |
| e | -2 PE to -1 PE | 2 | 19 | 8.5 | e | -2 PE to -1 PE | 2 | 19 | 9 |
| f | -3 PE to -2 PE | 1 | 19 | 8.5 | f | -3 PE to -2 PE | 1 | 29 | 13 |
| g | -4 PE to -3 PE | 0 | 9 | 4 | g | -4 PE to -3 PE | 0 | 2 | 1 |
| Social Participation (N=436) | | | | | (N=456) | | | | |
| a | +2 PE to +3 PE | 5 | 42 | 10 | a | +1 PE to +2 PE | 4 | 58 | 13 |
| b | +1 PE to +2 PE | 4 | 198 | 45 | b,c | -1 PE to +1 PE | 3 | 261 | 57 |
| c,d | -1 PE to +1 PE | 3 | 76 | 17 | d,e,g | -2 PE to -1 PE | 2 | 114 | 25 |
| e,g | -2 PE to -1 PE | 2 | 64 | 15 | f,h | -3 PE to -2 PE | 1 | 23 | 5 |
| g,h | -3 PE to -2 PE | 1 | 56 | 13 | | | | | |

## Table 5

### Scoring Keys, Adjustment Rating Scales, for Boys and Girls

| Over-all Classroom Work | | Weighted Score | | | |
|---|---|---|---|---|---|
| | | Boys | | Girls | |
| | | Form 1 | Form 2 | Form 1 | Form 2 |
| Item | | | | | |
| a. | Creative in carrying out assignments | 5 | 5 | 5 | 5 |
| b. | Works diligently and efficiently | 4 | 4 | 3 | 3 |
| c. | Completes assigned work, but is capable of higher level of work | 3 | 3 | 3 | 3 |
| d. | Tries, but unable to do the work | 3 | 3 | 2 | 2 |
| e. | Does only enough to satisfy minimum requirements | 3 | 3 | 2 | 2 |
| f. | Wastes time, fails to complete the work | 2 | 2 | 1 | 1 |
| g. | Ignores assignments, though capable | 2 | 2 | 1 | 1 |
| h. | Unable to do work (slow or disabled); does not try | 1 | 1 | 0 | 0 |
| Over-all Classroom Behavior | | | | | |
| a. | Well behaved | 4 | 4 | 4 | 4 |
| b. | Infrequent minor infractions of discipline | 3 | 3 | 2 | 2 |
| c. | Accepts regulations, occasionally violating minor rules | 3 | 3 | 3 | 3 |
| d. | Usually well behaved but violations are serious ones | 2 | 2 | 1 | 1 |
| e. | Frequent infractions of regulations | 2 | 2 | 1 | 1 |
| f. | Disturbing behavior, flagrant violations of discipline | 1 | 1 | -1 | -1 |
| Adjustment to Other Children | | | | | |
| a. | Accepted by students of both sexes | 4 | 4 | 4 | 4 |
| b. | Accepted as member of the group by most fellow students | 3 | 3 | 3 | 3 |
| c. | Has a few well adjusted friends | 3 | | 3 | |
| d. | Has a few friends who are not well adjusted | 1 | | 1 | |
| e. | Accepted by own group; rejected by others | 2 | 2 | 2 | 2 |
| f. | Disregarded by most classmates but not openly disliked | 1 | 1 | 0 | 1 |
| g. | Generally disliked or rejected by group. Friends, if any, also unacceptable | 0 | 0 | -1 | 0 |

Scoring Keys, Adjustment Rating
Scales, for Boys and Girls. Table 5 Cont.)

Social Participation

| | | | | | |
|---|---|---|---|---|---|
| a. | Demonstrates positive leadership, seeks social contacts | 5 | 5 | 4 | 4 |
| b. | Normal social participation | 4 | 4 | 3 | 3 |
| c. | Does not seek contacts, but sought out by others | 3 | 3 | 3 | 3 |
| d. | Converses with or cooperates with a few others | 3 | 3 | 2 | 2 |
| e. | Leader in undesirable behavior | 2 | 2 | 2 | 2 |
| f. | Follower in undesirable behavior | 1 | 1 | 1 | 1 |
| g. | Shy and timid | 2 | 2 | 2 | 2 |
| h. | Isolates self from group or responds only when approached by others | 1 | 1 | 1 | 1 |

# A BEHAVIOR CHECKLIST FOR THE PERSONALITY EVALUATION OF EDUCABLE MENTALLY HANDICAPPED CHILDREN

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# A Behavior Checklist for the Personality Evaluation of Educable Mentally Handicapped Children [1]

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## Construction of the Chicago Cooperative Research Project Behavior Checklist

The Cooperative Research Project Behavior Checklist was developed for the purpose of categorizing personality or adjustment patterns of educable mentally handicapped children through teacher reports of behavioral data observable in classroom and school situations. This instrument evolved through four editions, each of which was administered to a separate group of educable mentally handicapped subjects.

At the outset, a typology of educable mentally handicapped children's basic personality or adjustment patterns was postulated. It was hypothesized that EMH personalities might be classified into the following types: (1) withdrawn, (2) lethargic, (3) hyperactive, (4) well adjusted, (5) over-excitable, and (6) aggressive. In accordance with this hypothesis, a behavior checklist was drawn up which consisted of items of observable behavior thought to exemplify each of these general personality patterns. The experimental edition of this instrument consisted of two parts. The first part was a categorization sheet. This sheet carried the six category headings. Under each heading were five descriptions of specific behaviors which were considered characteristic of that particular pattern. The second part was an observable classroom behavior checklist. The checklist consisted of the descriptive statements of the categorization sheet in scrambled order. There were twenty-nine items in the checklist, one item from the fifth category having been inadvertently combined with the preceding item through a clerical error. A committee meeting of thirteen experienced teachers of educable mentally handicapped classes was convened. As a first task, these teachers were presented the categorization sheet with instructions to check the one category which best described each pupil then enrolled in their class. Following this task, the committee was given a dissimilar assignment. After lunch, the committee was reconvened and presented the observable classroom behavior checklist with instructions to check all items that applied to each child being rated. A total of 215 educable mentally handicapped children were rated by the thirteen teachers in the try-out of the experimental form of the Behavior Checklist.

In the discussion which followed these tasks the teachers reported that they had found it easier to check off the twenty-nine item checklist than to make a decision on single categorizations. Also, it was found that it had required less time for the teachers to complete the set of checklists than the set of categorizations. None of the teachers had recognized the scrambled list as being composed of the same items which were listed under the six main categories of the categorization form they had completed that morning.

In an effort to determine whether this experimental instrument possessed any validity at all, several very simple analyses were done. The categorization forms were sorted according to the categories into which each pupil was placed by his teacher, and the mean number of items in the scrambled checklist which were used in the categorization form to describe each category were compared for the groups of pupils placed in each of the other six classifications. These comparisons are shown in Table 1. A substantially larger mean number of items belonging to a category were checked for children classified in that category than were checked for those not placed in that category.

Insert Table 1 about here

A comparison of the percentage of the time each item was checked for children classified in each of the six categories is shown in Table 2.

Insert Table 2 about here

The data in this table indicated that the well-adjusted category stood out as independent of the others, but that the items selected to describe the withdrawn and lethargic categories were similar, and that there was also a similarity in the items designating the emotionally excitable and aggressive categories. In addition, the aggressive category also showed similarities with the lethargic and hyperactive classifications. Four of the items assigned to the lethargic pattern and two of the items assigned to the hyperactive pattern were checked off for forty per cent or more of the children who were categorized by the teachers as aggressive. The hyperactive category appeared to be weakest from the point of view of percentage of items in that category checked for pupils classified therein by their teachers, but the strength of this category may have been influenced by the fact that it was one of the items in this category which had been erroneously combined with an item in category 5 in the typing of the scrambled list.

First Revised Edition

On the basis of teachers' comments and preliminary analysis of the experimental edition, the first revised edition of the Cooperative Research Project Behavior Checklist was developed. Since teachers had found the checklist easier to handle than the categorization sheet, and since some expressed reservations about making single categorical judgments, the first revised edition required only that teachers check items applying to a specified child. Five items were selected as characterizing each of seven categories: (1) passive, (2) passive-hostile, (3) hyperactive, (4) well-adjusted, (5) emotionally excitable, (6) aggressive, and (7) inconsistent. The items applying to each of the seven categories were numbered in consecutive order from 1 to 5. The categories themselves were designated by Roman numerals, but were not named. The first revised editions of the Behavior Checklist were filled out for 263 educable mentally handicapped children in a pilot study conducted by the Cooperative Research Project in May, 1957. Mullen, Itkin and Brauer (1959) reported on relationships between this preliminary form of the Behavior Checklist and the Chicago Adjustment Rating Scales.

An item analysis was conducted on the checklist, wherein criterion groups of the twenty-seven per cent highest and the twenty-seven per cent lowest scores on each of the seven categories were identified and all thirty-five items in the Behavior Checklist correlated with upper and lower criterion group membership on each of the seven scales. A correction for overlap was applied to remove the spurious effect of the inclusion of an item within a scale upon the item-scale correlation. Point biserial r's were computed with the use of an abac presented in Guilford(1954 p. 429). Guilford's formula 15.17 (Guilford (1954 p. 439) was used in computing correlations for overlapping items.

Item-scale correlations from the item analysis of the second preliminary edition of the Behavior Checklist, after corrections for overlap and coarse grouping were made, are given in Table 3. The right hand columns of Table 3 show the scoring keys derived from the item analysis. A plus in the right hand columns indicates that an item was positively weighted in the scoring key, while a minus indicates that an item was negatively weighted for a particular scale in the scoring key. Revised scoring keys were derived from this analysis for the following six scales: (1) Passive, (2) Passive-Hostile, (3) Hyperactive, (4) Well-Adjusted, (5) Emotionally Excitable-Aggressive, and (6) Inconsistent. Keys for each of the six scales were made up of all items correlating with that scale either positively or negatively at the one per cent level, or having a point biserial correlation with the scale of .18 or higher. A single Active-Hostile scale was derived from the Emotionally Excitable

Insert Table 3 about here

and Aggressive scales because of the similarity in the item-scale correlations of these two scales. The Inconsistent scale did not appear to make an independent contribution, items in this scale generally correlating higher with the original Emotionally Excitable, Aggressive and Hyperactive scales than with their own. This scale was therefore eliminated. The Passive-Hostile category was a new dimension inferred from the findings of positive relationships between certain items on the original Lethargic scale and items from the Emotionally Excitable and Aggressive scales and from negative correlations between the Lethargic scale and items on the Well Adjusted scale. Central personality patterns were assigned to each protocol according to the category in which the highest z score was received, except where no z scores were above .5, in which case protocols were placed in a "No Strong Indication" category.

### Third Edition of the Behavior Checklist

In its third edition, the Cooperative Research Project Behavior Checklist was changed from a simple checklist to a forced choice type of checklist. Teachers were asked to circle a number opposite each item in a "yes" column for those items which were considered to apply to a particular child, and to circle a number in a "no" column for those items which did not apply to a child. The number of items was reduced from 35 to 30, and items were arranged in a scrambled order. The third edition of the Behavior Checklists were made out in an evening meeting by a representative group of EMH teachers for 165 children in their classrooms. In an item analysis of the third edition, initial scoring was based upon keys derived from item analysis of the previous edition. Scores on each scale were dichotomized at the median, and point biserial correlations computed from an abac provided by Guilford (Guilford, 1954). Table 4 gives point biserial correlations between each item and each of the five scales of the third edition of the Behavior Checklist.

Insert Table 4 about here

### Fourth Edition of the Behavior Checklist

The fourth edition of the Behavior Checklist was used in the major experiments carried out by the Chicago Cooperative Research Project . It consisted of twenty-nine of the items of the previous edition, plus ten new items. The ten items provided for two new scales, a Motivation scale and a Responsibility scale. The primary source of items for the Motivation scale was a Motivation Rating Scale, which had been developed in the Cooperative Research Project and was used in the preliminary study reported upon by Mullen, Itkin and Brauer(1959). All items of the second edition of the Behavior Checklist were correlated with scores on the Motivation Rating Scale, and those items showing a substantial correlation with the Motivation Rating Scale were included in the new Motivation Key. The basic source of items for the Responsibility Scale came from another instrument which was developed in the Cooperative Research Project and used in the preliminary pilot studies. This instrument was called the Performance Checklist. It included a number of items of the Vineland Social Maturity type which were related to the factors of self-help and independence.

The fourth edition of the Behavior Checklist was utilized in a matched-pair experiment involving more than 600 educable mentally handicapped children tested individually and in methods experiments involving intact groups of educable mentally handicapped children. Item analyses were carried out on Behavior Checklists on 652 educable mentally handicapped children, ages 7 through 14, with Stanford-Binet IQ's 50 through 74, inclusive. In the computation of item-scale correlations for the item analysis of the fourth edition of the Behavior Checklist, the selection of the criterion groups for each item included in a particular scale was based on t-1 items, the item to be correlated with the scale having been removed to eliminate spurious correlation. Thus, an item keyed in a particular scale did not contribute to the scale score in the selection of the criterion groups. The item analysis was carried out on seven scales: (1) Passive, (2) Passive-Aggressive, (3) Well-Adjusted, (4) Hyperactive, (5) Active-Aggressive, (6) Motivation, and (7) Responsibility. The key used in the initial selection of the criterion groups on Responsibility included eight of the newly added items and two items from the previous list of thirty which were considered most clearly representative of the construct of responsibility. These two items from the previous edition of the Behavior Checklist were items 1 and 25, "Tries to do his work" and "Accepts responsibility."

Results of the item analysis of the fourth edition of the Behavior Checklist and the final scoring keys derived from these analyses are shown in Table 5.

Insert Table 5 about here

Derivation of Central Personality Patterns from Behavior Checklist Scores

Because of high inter-scale correlations, only three basic scales from the Behavior Checklist were used in deriving personality patterns. These correlations, based on an N of 651, were .95 between the Passive and Passive-Aggressive scales; .99 between the Active-Aggressive and Hyperactive scales; .78 between the Passive and Hyperactive scales; .96 between the Passive-Aggressive and Motivation scales. In view of these correlations, the decision was made to employ the Well Adjusted, Passive, and Active-Aggressive scales in deriving central personality patterns from scale scores. Seven basic personality patterns for EMH children were postulated: (1) Well-Adjusted, (2) Moderately Well-Adjusted, (3) Passive, (4) Passive-Aggressive, (5) Hyperactive, (6) Active-Aggressive, and (7) Mildly Aggressive. Patterns of high and low scores on the three basic scales were derived for boys and girls separately by using the upper and lower 27 percents of the distributions of the three scales as cut-off points. Scores within the upper 27 per cent of a distribution were designated high; scores within the lower 27 per cent of a distribution, low; scores within the middle 46 per cent of a distribution, middle. Table 6 shows how central personality patterns were derived statistically from patterns of high, low and middle scores on the three basic scales of the Behavior Checklist.

Insert Table 6 about here

To illustrate the derivation of several patterns, the Well-Adjusted pattern consisted of those subjects who received high scores in the Well-Adjusted scales and low scores in either or both the Passive and Aggressive scales. No subjects in the Matched-Pair Experiment received high scores in both the Well-Adjusted scale and either the Passive or Aggressive scales because of the high negative relationship between the Well-Adjusted and the Passive and Aggressive scales. The Passive-Aggressive category included most, but not all subjects who received low or median scores on the Well-Adjusted scales and high scores in both of the other two scales . Where both Passive and Aggressive scores were in the upper 27 per cent, and the Well-Adjusted score within the lower or middle groups, categorization was done on the basis of a comparison of the z scores on the Passive and Aggressive Scales. Cases with Passive scores more than one standard deviation above the Aggressive scores were placed in the Passive category. Those with Aggressive scores one standard deviation above the Passive scores were placed in the Active-Aggressive category, and those whose Passive and Aggressive scores were within one z score of each other were placed in the Passive-Aggressive category. The combination of raw scores used to derive the central personality patterns of the subjects receiving high scores in both the Passive and Aggressive categories are shown in Table 7.

Insert Table 7 about here

Kuder-Richardson Formula 20 Reliability Coefficients were computed for 466 subjects in the Cooperative Research Project Matched-Pair Experiment who were retested during the second year of the experiment. The reliability coefficients, therefore, were not based on the same set of data on which the item analyses had been done, but on retest one year later. The K-R reliabilities for the five scales ranged from .86 for the Motivation scale to .92 for the Well-Adjusted scale. K-R reliabilities of the Passive, Responsibility, and Active-Aggressive scales were .88, .90 and .91 respectively. Intra-class test-retest reliabilities over a three month interval were computed for 174 educable mentally handicapped children in 14 classrooms in a Methods Experiment for whom Behavior Checklists were made out by their teachers in March and June, 1958. The test-retest reliabilities were .69 for the Passive scale, .73 for the Well-Adjusted scale, .74 for the Active-Aggressive scale, .70 for the Motivation scale, and .72 for the Responsibility scale. Thus, the stability of the instrument for educable mentally handicapped children rated by the same teachers in the same classrooms over a three-month interval ranged from .69 to .74. In the Matched-Pair Experiment, over a one-year interval, with numerous changes of classrooms and placements in retested sample, the test-retest correlations for the five basic scales of the Behavior Checklist ranged from .42 for the Passive scale to .45 for the Active-Aggressive scale.

To determine the stability of the central personality patterns over a one-year interval, a contingency table comparing 1957-58 with 1958-59 central personality patterns in the Matched-Pair Experiment was drawn up. This is shown in Table 8.

Insert Table 8 about here

Two types of significance tests were made. Tetrachoric correlations for central personality patterns on the two consecutive years were computed for the different categories and for several combinations of categories. In computing these correlations, the assumption was made that subjects categorized in a certain personality pattern possessed a high degree of that attribute as compared with subjects categorized in any of the other personality patterns. A second test of stability was the use of a contingency analysis suggested by Williams (Mayo, 1957), wherein the seven classifications were arbitrarily reduced to three classes. These three classes were the Well-Adjusted pattern, the Moderately-Well-Adjusted pattern, and a combination of the not Well Adjusted categories, patterns 3 to 7, inclusive. Table 8 shows the tetrachoric test-retest correlations for central personality patterns over a one-year interval. Patterns which inspection of Table 8 showed were not stable over a one-year period were not included in this table. The Active-Aggresssive category was the only single pattern showing high stability over a one-year period. A broad Well-Adjusted category, derived from a combination of the Well-Adjusted and Moderately-Well-Adjusted personality patterns, and a broad Passive category, derived from a combination of the Passive and Passive-Aggressive patterns, yielded tetrachoric correlations of .50 over a one-year interval. The test-retest **r** based on the Williams contingency analysis was .37. This coefficient probably underestimates the over-all stability of the Behavior Checklist, since the Moderately-Well-Adjusted category absorbed most of the changes from the Well-Adjusted and the not Well-Adjusted categories from test to retest period. It does not reflect the infrequency of shifts from the Well Adjusted to the Poorly-Adjusted categories and vice versa.

Validity

Three validity studies were conducted in an effort to demonstrate construct validity of the central personality patterns derived from the Behavior Checklist scales.

The first validity study compared the BCL personality categorizations from the retest year of the Matched-Pair Experiment with a concurrent criterion of observer categorizations made at the time of the retest. A contingency table comparing BCL central personality patterns and observer categorizations as a concurrent criterion is presented in Table 8, and Table 9 shows tetrachoric correlations and $X^2$'s based on this contingency table.

Insert Table 9 about here

The highest tetrachoric correlations were for the broad Aggressive category and broad Well-Adjusted category, .76 and.64, respectively. For the Well-Adjusted, Active-Aggressive, and broad Passive categories, the tetrachoric correlations were .50, .54,and .51. By way of comparison of the validity of the central personality patterns with that of single scales, tetrachoric correlations were computed between scores on the five major scales of the basic Behavior Checklist, dichotomized at their medians, and Observer Categorizations. These are reported in Table 12. Tetrachoric correlations were obtained as follows : .58 for the Well-Adjusted scale, .38 for the Passive scale, and .65 for the Aggressive scale. The relationships between scale scores and Observer Categorizations thus are seen to be consistently lower than the correlations between the central personality patterns and Observer Categorizations. Tetrachoric correlations between scores on the Motivation and Responsibility scales and ratings of motivation made by observers were .21 and. .31,respectively.

The second Validity Study utilized Behavior Checklists on educable mentally handicapped children participating in methods experiments. Central personality patterns derived from September, 1958 Behavior Checklists were compared with personality categorizations of the same children by their teachers in May, 1959. This test of validity involved not only a test of similarity of the statistical categorization and of the direct categorizations by teachers, but also a test of stability over an eight-month interval. Table 8 contains a contingency table showing comparisons between the September, 1958 BCL personality patterns and the May, 1959 teacher categorizations. Table 9 presents tetrachoric correlations and $X^2$'s for the corresponding comparisons. Tetrachoric correlations between central personality patterns from the September, 1958 Behavior Checklist and the May, 1959 teacher categorizations for corresponding patterns were .74 for the Well-Adjusted scale, .51 for the Active-Aggressive scale, and .64, .40 and .51 for broad Well-Adjusted, Passive and Aggressive categories, respectively. Chi squares for the Well-Adjusted, Moderately-Well-Adjusted and Passive-Aggressive pattern were significant well beyond the .001 level. Williams' correlations between September, 1958 BCL's and May, 1959 Teacher Categorizations based on contingency analysis with three classes, Well-Adjusted, Moderately-Well-Adjusted, and Not-Well-Adjusted, was .63.

For 298 of the same cases, categorizations by staff examiners in May and June, 1959 were available for comparison with September, 1958 BCL central personality patterns. Tetrachoric correlations and $X^2$'s for those comparisons for which sufficient data were available are reported in Table 9. The tetrachoric correlations for the Well-Adjusted, Active-Aggressive, broad Well-Adjusted and broad Aggressive categories were significant, but were considerably lower than the corresponding relationships between Behavior Checklist patterns and subsequent teacher categorizations. Williams' r based on contingency analyses of BCL patterns and subsequent observer categorizations on a 3 X 3 table was .26.

In a third validity study, central personality patterns derived from the Behavior Checklists were related to criterion groups of EMH children who were nominated by staff examiners as the best and most poorly adjusted children tested during the first year of the Matched-Pair Experiment. The group nominated by examiners as most poorly adjusted was further divided according to whether examiners had also categorized them in Aggressive or Hostile categories or in categories other than Hostile or Aggressive. The Behavior Checklist was not available to observers at the time they made either their categorizations or their nominations. Chi square tests of relationships between Behavior Checklist Well-Adjusted, Aggressive, and Passive categories and nomination group membership were significant well beyond the .001 level. These $X^2$'s were reported in Table 10.

Insert Table 10 about here

Ordering of Central Personality Pattern Categories on an Adjustment Continuum.

In an attempt to order the central personality patterns derived from the Behavior Checklist on an adjustment continuum, the mean adjustment rating scale scores obtained on the Cooperative Research Project Adjustment Rating Scale were computed for each of the seven central personality patterns for boys and girls separately. By way of comparison, the mean score of a standardization group of regular grade children on the Adjustment Rating Scale was 12.11 with a standard deviation 3.0. These means are shown in Table 11.

Insert Table 11 about here

These data indicate that teachers recognize the Passive, Active-Aggressive, and Passive-Aggressive categories as indicating a marked difference in adjustment from the well-adjusted categories. The means of the Well-Adjusted and Moderately-Well-Adjusted categories differed by almost two points, but the difference between the means of the Moderately-Well-Adjusted and the three poorly adjusted categories were of the magnitude in excess of one standard deviation of the normative sample. Because of the small number of cases receiving Behavior Checklist central personality patterns of Hyperactive and Mildly-Aggressive, no confidence can be placed in the means obtained for these categories.

### A Check on Frame of Reference

Behavior Checklist categories for educable mentally handicapped children placed in special divisions and those placed in regular grades were compared with Observers' Categorizations to determine whether frame of reference of teacher might be a factor influencing categorizations received by educable mentally handicapped children on Behavior Checklists. These data are shown in Table 12.

Insert Table 12 about here

There was no significant difference in the proportion of placed and regular grade children receiving Well-Adjusted categorizations from Behavior Checklists and from observers ,but a greater proportion of subjects placed in EMH divisions who had been categorized other than well adjusted by staff examiners received Well Adjusted or Moderately-Well-Adjusted categorizations on their Behavior Checklists than EMH children placed in regular grades. These data suggest two possible interpretations: one, that EMH teachers tend to be more lenient than regular grade teachers with respect to recording poorly adjusted behavior on Behavior Checklists, and two, that EMH children in special divisions do in fact show less aggressive, passive, or non-adaptive behavior than children of comparable personality adjustment who are placed in regular grades. Additional research would be required to determine which of these explanations is the more tenable.

## Summary

The Cooperative Research Project Behavior Checklist is a brief and economical instrument which can be produced inexpensively and can be completed in approximately five minutes of a teacher's time. The five scales which are derived from this instrument have high internal consistency and satisfactory stability over an interval of as high as three months in situations in which no change of pupil placement occurs. Several basic patterns derived from combinations of scale scores from the Behavior Checklist, notably a well-adjusted category and a broad aggressive category, show high stability, as reflected in teacher categorizations over a period of time in excess of one full semester. The validity studies reported in this paper are considered in the category of construct validity rather than of concurrent validity. The evidence summarized in this paper, however, indicates that the Behavior Checklist possesses adequate validity for use as a screening measure to select criterion groups of well-adjusted and poorly-adjusted children, as a screening measure to select educable mentally handicapped children in need of psychological services, and as a measure of change of adjustment for use in studies of groups of educable mentally handicapped children.

The evidence available so far indicates only that the Behavior Checklist is adequate for discriminating between extreme groups of well-adjusted and poorly-adjusted educable mentally handicapped children. There is insufficient evidence for validity of patterns other than the well-adjusted and aggressive adjustment patterns as discreet types. Inspection of the contingency tables indicates that there is no support for validity of the Hyperactive or Mildly-Aggressive patterns. The Moderately-Well-Adjusted pattern serves as a buffer category absorbing diagnostic errors which, but for this category, might be misclassified diagnostically. The Passive category seems to possess a small degree of validity, but our criteria often confused the Passive category with the Moderately-Well-Adjusted. It may be possible, through using observer categorization and teacher categorization as a multiple concurrent criterion, to develop, emperically, more discriminating Passive and Hyperactive scales. The research with this instrument which has been reported in this paper suggests that it would be well worth using the Behavior Checklist in a study of normal children.

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Table 1

Comparison of Mean Number of Items of Experimental Edition of Behavior Checklist Checked for EMH Children Classified by Teachers in each of Six Personality Categories

| | | Mean Number of Items Checked for Children Classified in each Category | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Category | N | I | II | III | IV | V | VI | Mean Total Sample |
| I. Withdrawn | 32 | 2.8 | 3.4 | 0.3 | 1.4 | 0.2 | 0.4 | 1.0 |
| II. Lethargic | 28 | 1.0 | 3.5 | 0.1 | 1.4 | 0.5 | 0.5 | 1.7 |
| III. Hyperactive | 36 | 0.5 | 1.5 | 1.9 | 1.9 | 1.0 | 0.9 | .6 |
| IV. Well-Adjusted | 94 | 0.5 | 0.5 | 0.1 | 4.5 | 0.1 | 0.1 | 2.9 |
| V. Emotionally Excitable | 15 | 0.3 | 0.7 | 1.3 | 0.9 | 2.4 | 1.8 | .6 |
| VI. Aggressive | 10 | 1.0 | 2.6 | 0.9 | 0.8 | 2.2 | 3.4 | .6 |
| | 215 | | | | | | | |

### Table 2

### Per Cent of Children Classified in each of Six Personality Categories for Whom each Item of Experimental Behavior Checklist was Checked

|  | Personality Categories |  |  |  |  |  |
|---|---|---|---|---|---|---|
| Item | I | II | III | IV | V | VI |
| I. Withdrawn |  |  |  |  |  |  |
| 1. | 28 | 14 | 22 | 4 | 0 | 40 |
| 2. | 72 | 21 | 11 | 3 | 6 | 30 |
| 3. | 34 | 26 | 28 | 11 | 13 | 0 |
| 4. | 78 | 21 | 6 | 17 | 6 | 10 |
| 5. | 69 | 21 | 33 | 16 | 0 | 20 |
| II. Lethargic |  |  |  |  |  |  |
| 1. | 66 | 61 | 58 | 19 | 26 | 40 |
| 2. | 53 | 58 | 33 | 3 | 26 | 80 |
| 3. | 81 | 61 | 22 | 16 | 6 | 30 |
| 4. | 56 | 75 | 28 | 8 | 6 | 70 |
| 5. | 81 | 86 | 11 | 3 | 6 | 40 |
| III. Hyperactive |  |  |  |  |  |  |
| 1. | 3 | 0 | 44 | 3 | 20 | 40 |
| 2. | 6 | 7 | 70 | 3 | 40 | 50 |
| 3. | 13 | 0 | 25 | 3 | 20 | 0 |
| 4.* |  |  |  |  |  |  |
| 5. | 0 | 0 | 33 | 0 | 6 | 0 |
| IV. Well-Adjusted |  |  |  |  |  |  |
| 1. | 16 | 14 | 47 | 85 | 20 | 10 |
| 2. | 66 | 50 | 28 | 86 | 0 | 0 |
| 3. | 9 | 18 | 28 | 89 | 13 | 30 |
| 4. | 31 | 40 | 42 | 96 | 20 | 20 |
| 5. | 16 | 18 | 3 | 90 | 33 | 20 |

(Table 2 Cont.)

| Item | Personality Categorization | | | | | |
|---|---|---|---|---|---|---|
| | I | II | III | IV | V | VI |
| **V. Emotionally Excitable** | | | | | | |
| 1. | 6 | 18 | 36 | 6 | 73 | 60 |
| 2. * | 0 | 0 | 3 | 2 | 0 | 0 |
| 3. | 6 | 7 | 19 | 0 | 53 | 60 |
| 4. | 0 | 7 | 22 | 1 | 53 | 70 |
| 5. | 3 | 11 | 17 | 1 | 60 | 30 |
| **VI. Aggressive** | | | | | | |
| 1. | 22 | 14 | 22 | 1 | 26 | 90 |
| 2. | 6 | 7 | 33 | 2 | 53 | 70 |
| 3. | 3 | 4 | 6 | 1 | 20 | 30 |
| 4. | 3 | 4 | 14 | 0 | 20 | 80 |
| 5. | 6 | 18 | 11 | 3 | 50 | 70 |

* Items III 4 and V 2 combined through error.

Table 3

Derivation of Scoring Keys from Item Analysis of First Revised Edition of Behavior Checklist

| | Item - Scale Correlations of Provisional Scales after Correction for Overlap and Coarse Grouping | | | | | | | Derived Scale Keys | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Items | I | II | III | IV | V | VI | VII | Passive | Passive - Hostile | Hyperactive | Well-Adj. | Aggressive Exc. | Inconsistent |
| I. Withdrawn | | | | | | | | | | | | | |
| 1. | .29 | .55 | .06 | -.37 | .08 | .09 | -.11 | + | + | | - | | |
| 2. | .15 | .48 | .25 | -.14 | .14 | .05 | .10 | + | + | + | | | |
| 3. | .14 | .14 | -.19 | -.11 | -.40 | .35 | -.19 | | | | | | |
| 4. | .15 | .39 | .10 | -.19 | .11 | .10 | .13 | + | + | | | | |
| 5. | 0 | .31 | .06 | -.15 | .24 | .21 | .11 | | | | | | |
| II. Lethargic | | | | | | | | | | | | | |
| 1. | .36 | .30 | .13 | -.37 | .31 | .26 | .08 | + | + | | - | + | |
| 2. | .25 | .42 | .13 | -.31 | .25 | .19 | -.06 | + | + | | - | + | |
| 3. | .55 | .32 | -.13 | -.15 | .19 | -.08 | -.03 | + | + | | | | |
| 4. | .44 | .37 | .06 | -.19 | .24 | .10 | 0 | + | + | | - | | |
| 5. | .46 | .37 | -.11 | -.43 | .20 | .17 | -.21 | + | + | | - | | |
| III. Hyperactive | | | | | | | | | | | | | |
| 1. | -.15 | .11 | .31 | -.48 | .35 | .42 | .37 | | | + | - | + | + |
| 2. | -.03 | .13 | .32 | -.35 | .38 | .43 | .43 | | | + | - | + | + |
| 3. | -.08 | -.04 | .20 | -.48 | .20 | .22 | .25 | | | + | - | | + |
| 4. | -.06 | .09 | .21 | -.31 | .25 | .22 | .47 | | | + | - | + | + |
| 5. | -.19 | . 0 | . 0 | -.37 | .24 | .24 | .13 | | | | | | |

Table 3 (Continued)

| | I | II | III | IV | V | VI | VII | Pass-ive | Pass-ive Hostile | Hyper-active | Well-Adj. | Agg-ress-ive Exc. | Incon sis-tent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **IV. Well-Adjusted** | | | | | | | | | | | | | |
| 1. | -.26 | -.31 | -.45 | .62 | -.44 | -.37 | -.17 | | - | - | + | - | |
| 2. | -.04 | -.19 | -.48 | .44 | -.42 | -.52 | -.15 | | | - | + | - | |
| 3. | -.40 | -.54 | -.43 | .59 | -.29 | -.39 | -.14 | | - | - | + | - | |
| 4. | -.25 | -.26 | -.51 | .63 | -.46 | -.43 | -.37 | | - | - | + | - | |
| 5. | -.26 | -.27 | -.13 | .43 | -.39 | -.27 | .10 | | - | | + | - | |
| **V.Emotionally** | | | | | | | | | | | | | |
| **1.Excitable** | -.04 | .06 | .46 | -.48 | .46 | .43 | .37 | | | + | - | + | + |
| 2. | .14 | .22 | .43 | -.47 | .53 | .46 | .37 | + | + | + | - | + | + |
| 3. | .06 | .15 | .39 | -.53 | .46 | .51 | .37 | | | + | - | + | + |
| 4. | .11 | .10 | .57 | -.46 | .37 | .49 | .33 | | | + | - | + | + |
| 5. | .06 | .13 | .40 | -.47 | .37 | .40 | .27 | | | + | - | + | + |
| **VI.Aggressive** | | | | | | | | | | | | | |
| 1. | -.01 | .33 | .59 | -.59 | .49 | .42 | .22 | | + | + | - | + | |
| 2. | -.09 | .22 | .62 | -.49 | .49 | .44 | .37 | | | + | - | + | + |
| 3. | .09 | .11 | .25 | -.15 | .31 | .55 | .25 | | | | | | |
| 4. | .16 | .35 | .49 | -.46 | .47 | .33 | .37 | | + | + | - | + | + |
| 5. | 0 | .10 | .48 | -.46 | .48 | .33 | .24 | | | + | - | + | |
| **VII.Inconsistent** | | | | | | | | | | | | | |
| 1. | .06 | -.11 | .30 | -.14 | .37 | .19 | .13 | | | | | + | |
| 2. | .06 | .22 | .37 | -.26 | .36 | .35 | .17 | | | + | - | + | |
| 3. | .15 | .05 | .19 | -.25 | .25 | .24 | .29 | | | | - | + | + |
| 4. | .27 | .27 | .16 | -.14 | .39 | .25 | .20 | + | + | | | + | |
| 5. | .04 | .10 | .47 | 0 | .24 | .20 | .33 | | | | | + | + |

## Table 4

## Item Analysis of Third Edition of Behavior Checklist[a]

| | Passive<br>I | Passive-Hostile<br>II | Well-Adjusted<br>III | Hyperactive<br>IV | Active Aggressive<br>V |
|---|---|---|---|---|---|
| 1. | -.53 | -.59 | .46 | -.29 | -.34 |
| 2. | -.32 | -.49 | .38 | -.22 | -.37 |
| 3. | .50 | .46 | -.46 | .43 | .50 |
| 4. | 0 | .06 | -.29 | .44 | .31 |
| 5. | .56 | .60 | -.30 | .17 | .19 |
| 6. | .52 | .38 | -.09 | .0 | -.09 |
| 7. | .15 | .22 | -.31 | .43 | .35 |
| 8. | .65 | .60 | -.34 | .21 | .27 |
| 9. | .15 | .36 | -.65 | .60 | .64 |
| 10. | .56 | .50 | -.10 | -.10 | .08 |
| 11. | .08 | -.04 | .37 | -.41 | -.44 |
| 12. | -.29 | -.49 | .53 | -.59 | -.54 |
| 13. | -.39 | -.50 | .52 | -.59 | -.51 |
| 14. | .12 | .0 | .21 | -.25 | -.20 |
| 15. | .44 | .50 | -.68 | +.65 | +.65 |
| 16. | .27 | .40 | -.68 | +.68 | +.68 |
| 17. | .30 | .49 | -.65 | +.56 | +.60 |
| 18. | .14 | .39 | -.43 | .40 | .47 |
| 19. | .42 | .50 | -.51 | .42 | .48 |
| 20. | .12 | .30 | -.60 | .62 | .62 |
| 21. | .61 | .55 | -.36 | .04 | .19 |
| 22. | .14 | .08 | -.32 | .38 | .33 |
| 23. | .50 | .50 | -.50 | .11 | .30 |
| 24. | .0 | .04 | -.18 | .19 | .27 |
| 25. | -.44 | -.52 | .46 | -.33 | -.47 |
| 26. | .07 | .17 | -.54 | .59 | .56 |
| 27. | .07 | .16 | -.40 | .48 | .37 |
| 28. | .05 | .23 | -.52 | .58 | .55 |
| 29. | .52 | .46 | -.24 | -.04 | .03 |
| 30. | -.09 | .20 | -.52 | +.40 | +.50 |

[a] Based on Pt. Biserial Correlations

Table 5

Derivation of Scoring Keys of Fourth Edition of Behavior Checklist from Item-Scale Correlations

| Item | Passive | | Passive-Hostile | | Well Adjusted | | Hyperactive | | Active aggressive | | Motivation | | Responsibility | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | r | key | r | key | r | key | r | key | r | key | r | key | r | key |
| 1. | -.63 | - | -.72 | - | .70 | + | -.67 | - | -.69 | - | .70 | + | .50 | + |
| 2. | -.54 | - | -.58 | - | .57 | + | -.42 | | -.36 | | .42 | | .30 | |
| 3. | .54 | + | .59 | + | -.56 | - | .60 | + | .61 | + | .56 | - | -.48 | - |
| 4. | .23 | | .34 | | -.59 | - | +.59 | + | .65 | + | .23 | | -.42 | |
| 5. | .78 | + | .72 | + | -.58 | - | .48 | + | .55 | + | .75 | - | -.43 | - |
| 6. | .53 | + | .45 | + | -.22 | | -.09 | | .06 | | -.55 | - | -.22 | |
| 7. | .32 | | .40 | | -.75 | - | .77 | + | .76 | + | -.33 | | -.50 | - |
| 8. | .49 | + | .50 | + | -.32 | | .19 | | .27 | | -.54 | - | -.31 | |
| 9. | .38 | | .43 | | -.70 | - | .78 | + | .69 | + | -.35 | | -.30 | |
| 10. | .58 | + | .66 | + | -.43 | - | .30 | | .31 | | -.59 | - | -.34 | |
| 11. | -.29 | | -.27 | | .42 | + | -.48 | - | -.49 | - | .10 | | .27 | |
| 12. | -.44 | | -.52 | - | .63 | + | -.75 | - | -.67 | - | .43 | | .40 | |
| 13. | -.49 | - | -.59 | - | .62 | + | -.61 | - | -.61 | - | .51 | + | .53 | + |
| 14. | .13 | | .13 | | -.07 | | .15 | | .10 | | .0 | | -.04 | |
| 15. | .36 | | .59 | + | -.71 | - | .73 | + | .67 | + | -.45 | | -.44 | |
| 16. | .48 | | .54 | + | -.75 | - | .78 | + | .78 | + | -.42 | | -.40 | |
| 17. | .62 | + | .62 | + | -.80 | - | .73 | + | .75 | + | -.62 | - | -.60 | - |
| 18. | .60 | + | .65 | + | -.75 | - | .71 | + | .75 | + | -.55 | - | -.33 | |
| 19. | .68 | + | .74 | + | -.77 | - | .67 | + | .71 | + | -.72 | - | -.62 | - |
| 20. | .39 | | .46 | + | -.72 | - | .75 | + | .74 | + | -.34 | | -.43 | |
| 21. | .69 | + | .69 | + | -.49 | - | .32 | | .40 | | -.71 | - | -.41 | |
| 22. | .29 | | .34 | | -.53 | - | .54 | + | .49 | | -.30 | | -.27 | |
| 23. | .68 | + | .69 | + | -.65 | - | .49 | + | .51 | + | -.66 | - | -.57 | - |
| 24. | .0 | | .04 | | -.30 | | .33 | | .29 | | 01 | | -.17 | |
| 25. | -60 | - | -.65 | - | .63 | + | -.54 | - | -.60 | - | 60 | + | .43 | + |

Table 5 Cont. Page 2

Derivation of Scoring Keys of Fourth Edition of Behavior Checklist from Item-Scale Correlations

| Item | Passive | | Passive-Hostile | | Well-Adjusted | | Hyperactive | | Active Aggressive | | Motivation | | Responsibility | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | r | key | r | key | r | key | r | key | r | key | r | key | r | key |
| 26 | .40 | | .50 | + | -.75 | - | .76 | + | .72 | + | -.44 | | -.45 | - |
| 27 | .27 | | .31 | | -.64 | - | .59 | + | .66 | + | -.25 | | -.35 | |
| 28 | .32 | | .41 | | -.71 | - | .73 | + | .73 | + | -.29 | | -.32 | |
| 29 | .63 | + | .64 | + | -.44 | - | .28 | | .33 | | -.67 | - | -.39 | |
| 30 | .33 | | .50 | + | -.65 | - | .66 | + | .66 | + | -.38 | | -.48 | - |
| 31 | -.43 | | -.54 | - | .52 | + | -.50 | - | -.52 | - | .48 | + | .56 | + |
| 32 | -.29 | | -.35 | - | .27 | | -.20 | | -.28 | | .32 | | .37 | + |
| 33 | .70 | + | .72 | + | -.76 | - | .55 | + | .66 | + | -.75 | - | -.69 | - |
| 34 | -.53 | - | -.60 | - | .60 | + | -.48 | - | -.55 | - | .55 | + | .49 | + |
| 35 | -.34 | | -.41 | | .41 | + | -.39 | | -.39 | | .43 | | .54 | + |
| 36 | -.44 | | -.57 | - | .54 | + | -.55 | - | -.48 | | .54 | + | .57 | + |
| 37 | -.47 | - | -.52 | - | .49 | + | -.46 | - | -.44 | - | .55 | + | .53 | + |
| 38 | .31 | | .47 | + | -.60 | - | +.60 | + | .54 | + | -.42 | | -.48 | - |
| 39 | .65 | + | .66 | + | -.49 | - | .26 | | .43 | + | -.61 | - | -.55 | - |

### Table 6

### Central Personality Patterns Postulated on the Basis of High, Middle, and Low Scores on Behavior Checklist Scales [a]

| Personality Pattern | Patterns of Scores on Well-Adjusted, Passive and Aggressive Scales<br>Well-Adjusted | Passive | Aggressive |
|---|---|---|---|
| 1. Well-Adjusted | H | L | M |
| | H | L | L |
| | H | M | L |
| 2. Moderately-Well-Adjusted | H | M | M |
| | M | M | M |
| | M | L | L |
| | M | M | L |
| | M | L | M |
| 3. Passive | M | H | M |
| | L | H | M |
| 4. Passive-Aggressive [b] | L | H | H |
| | M | H | H |
| 5. Hyperactive | M | M | H |
| | M | L | H |
| 6. Active-Aggressive | L | M | H |
| 7. Mildly-Aggressive | L | M | M |
| | L | L | M |

Code:

| | Boys<br>WA | P | A | Girls<br>WA | P | A |
|---|---|---|---|---|---|---|
| H = Upper 27% of distributions | 31-34 | 11-19 | 14-27 | 32-34 | 9-18 | 10-24 |
| M = Middle 46% of distributions | 18-30 | 2-10 | 3-13 | 23-31 | 2-8 | 2-9 |
| L = Lower 27% of distributions | 1-17 | 0-1 | 0-2 | 3-22 | 0-1 | 0-1 |

[a] Based on N's of 379 EMH boys and 271 EMH girls.

[b] Exception to categorization of LHH and MHH patterns.: Those with Passive scores more than one z score above Aggressive score categorized Passive; those with Aggressive scores more than one z score above their Passive scores were categorized Active-Aggressive; otherwise they were categorized Passive-Aggressive.

Table 7

Personality Categorization of BMH Children with both Passive and Active Scale Scores Within the Upper 27 Per Cent of their Distributions

| Boys | | | Girls | | |
|---|---|---|---|---|---|
| Passive Score | Aggressive Score | Categorization | Passive Score | Aggressive Score | Categorization |
| 11 | 22+ | Active Agg. | 9 | 16+ | Active Agg. |
| 12 | 23+ | Active Agg. | 10 | 18+ | Active Agg. |
| 13 | 25+ | Active Agg. | 11 | 19+ | Active Agg. |
| 14 | 26 | Active Agg. | 12 | 20+ | Active Agg. |
| 15 | 27 | Active Agg. | 13 | 21+ | Active Agg. |
| 16 | 14 | Passive | 14 | 23+ | Active Agg. |
| 17 | 14-16 | Passive | 14 | 10-11 | Passive |
| 18 | 14-17 | Passive | 15 | 24 | Active Agg. |
| 19 | 14-18 | Passive | 15 | 10-12 | Passive |
| | | | 16 | 10-13 | Passive |
| | | | 17 | 10-15 | Passive |
| | | | 18 | 10-16 | Passive |

Table 8

Stability and Validity of Central Personality Patterns Derived from Behavior Checklists

|  | Criteria |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BCL Personality Patterns | Retest Patterns, over a year Interval (Matched-Pair Data, N=500) |  |  |  |  |  |  | Examiners' Categorizations, Concurrent Criterion (Matched-Pair Retests, N=457) |  |  |  |  |  |  | Teacher Categorizations, for 8 month interval (Methods Experiments N=605) |  |  |  |  |  |  |
|  | 1 WA | 2 MWA | 3 P | 4 PA | 5 H | 6 AA | 7 MA | 1 WA | 2 MWA | 3 P | 4 PA | 5 H | 6 AA | 7 MA | 1 WA | 2 MWA | 3 P | 4 PA | 5 H | 6 AA | 7 MA |
| 1. WA | 57 | 45 | 6 | 5 | 2 | 3 | 2 | 66 | 46 | 11 | 2 | 2 | 1 | 2 | 124 | 41 | 9 | 2 | 1 | 3 | 4 |
| 2. MWA | 73 | 109 | 36 | 14 | 2 | 14 | 0 | 54 | 87 | 23 | 7 | 9 | 14 | 6 | 53 | 117 | 33 | 12 | 9 | 11 | 14 |
| 2. P | 6 | 10 | 10 | 7 | 0 | 1 | 0 | 5 | 11 | 11 | 4 | 1 | 1 | 1 | 3 | 12 | 8 | 2 | 1 | 1 | 1 |
| 4. PA | 3 | 19 | 3 | 10 | 1 | 8 | 0 | 2 | 5 | 5 | 11 | 4 | 6 | 4 | 3 | 7 | 6 | 11 | 2 | 8 | 4 |
| 5. H | 3 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 2 | 4 | 1 | 4 | 1 | 4 | 0 |
| 6. AA | 5 | 27 | 1 | 3 | 2 | 24 | 2 | 1 | 12 | 0 | 6 | 4 | 14 | 8 | 4 | 20 | 3 | 15 | 14 | 22 | 5 |
| 7. MA | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 |

Code: 1. WA- Well Adjusted
2. MWA- Moderately-Well-Adjusted
3. P- Passive
4. PA- Passive- Aggressive
5. H- Hyperactive
6. AA- Active-Aggressive
7. MA- Mildly-Aggressive

Table 9

Summary of Stability and Validity Studies of Central Personality Patterns Derived from Behavior Checklists

| BCL Central Personality Patterns | Retest Patterns after one year interval | N=500<br>rt | Concurrent Observers' Categorizations | N=457<br>rt | $x^2$ | P | Teachers' Categorizations after 8 month interval | N=605<br>rt | $x^2$ | P | Examiner Categorization after 8 month interval | N=298<br>rt | $x^2$ | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WA | WA | .38 | WA | .50 | | | WA | .74 | | | WA | .40 | | |
| WA | | | WA,MMA | | 37.03 | .0001 | WA,MMA | | 71.79 | .00001 | WA,MMA | | 5.82 | .05 |
| WA,MMA | WA,MMA | .50 | WA,MMA | .64 | | | WA,MMA | .61 | | | WA,MMA | .20 | | |
| MMA | MMA | | | | 8.91 | .01 | MMA | | 35.09 | .00001 | MMA | | .59 | .45 |
| MMA | MMA,WA,PA | | | | 3.10 | .10 | | | | | | | | |
| P | P | | | | 14.99 | .001 | P | | 8.73 | .01 | | | | |
| P,PA | P,PA | .50 | P,PA | .51 | | | P,PA | .40 | | | P,PA | .12 | | |
| PA | PA | | | | 28.25 | .00001 | PA | | 20.30 | .0001 | | | | |
| H | | | | | | | | | | | | | | |
| AA | AA | .62 | AA | .54 | | | AA | .51 | | | AA | .43 | | |
| NA | | | | | | | | | | | | | | |
| AA,PA,H,NA | AA,PA,H,NA | .55 | AA,PA,H,NA | .76 | | | AA,PA,H,NA | .73 | | | AA,PA,H,NA | .39 | | |

$X^2$ based on 2x2 contingency tables with Yates' corrections

Table 10

Relationship between BCL Central Personality Patterns and Observers' Nominations of Best and Most Poorly Adjusted EMH Children Examined

| Central Personality Patterns | Nomination Groups<br>Well Adjusted | Poorly Adjusted | Poorly Adjusted Hostile | Poorly Adjusted Non-Hostile | Well Adj.+ Poorly Adj., Hostile | Well Adj.+ Poorly Adj. Non-Hostile | $x^2$ | Level of Significance |
|---|---|---|---|---|---|---|---|---|
| WA | 20 | 6 | | | | | | |
| Patterns other than WA | 33 | 82 | | | | | 19.019 | .00001 |
| WA +MWA | 41 | 37 | | | | | 15.290 | .0001 |
| Patterns other than WA or MWA | 12 | 51 | | | | | | |
| AA + PA | 7 | | 23 | | | | | |
| Patterns other than AA or PA | 46 | | 23 | | | | 14.09 | .001 |
| P +PA | 2 | | | 16 | | | | |
| Patterns other than P or PA | 51 | | | 26 | | | 15.807 | .0001 |
| P+PA | | | | 16 | 11 | | | |
| Patterns other than P or PA | | | | 26 | 88 | | 12.181 | .001 |
| AA+PA | | | 23 | | | 20 | | |
| Patterns other than AA or PA | | | 23 | | | 76 | 11.188 | .001 |

## Table 11

## Mean Adjustment Rating Scale Scores for EMH Pupils Categorized in Seven Central Personality Patterns

| | Adjustment Rating Scale Scores | | | |
|---|---|---|---|---|
| Central Personality Patterns | Boys | | Girls | |
| | N | M | N | M |
| 1. Well-Adjusted | 76 | 13.96 | 61 | 12.39 |
| 2. Moderately-Well-Adjusted | 162 | 12.02 | 117 | 10.51 |
| 3. Passive | 25 | 8.12 | 27 | 7.18 |
| 4. Passive-Aggressive | 33 | 7.18 | 27 | 6.81 |
| 5. Hyperactive | 5 | 11.60 | 3 | 8.33 |
| 6. Active-Aggressive | 16 | 7.72 | 30 | 7.76 |
| 7. Mildly-Aggressive | 1 | 8.00 | 3 | 10.67 |

## Table 12

### Check on Possible Influence of Frame of Reference of Teachers upon Behavior Checklist Personality Pattern Categorizations from Comparison of BCL Categorizations with Observer Categorizations of the Same Children

| Observers' Categorizations of Well-Adjusted | Behavior Checklist Categorizations: Well-Adjusted | Behavior Checklist Categorizations: Other than Well-Adjusted | |
|---|---|---|---|
| Regular Grade Children | 99 | 19 | |
| Special Division Children | 157 | 22 | |
| | 256 | 41 | $X^2 = .577$ n.s |

| Observers' Categorizations of other than Well-Adjusted | Well-Adjusted | Other than Well-Adjusted | |
|---|---|---|---|
| Regular Grade Children | 23 | 42 | |
| Special Division Children | 56 | 48 | |
| | 79 | 90 | $X^2 = 4.88$<br>$P = .05$ |

Chicago Board of Education
Cooperative Research Project

## BEHAVIOR CHECKLIST

Name of Pupil:________________________ Date of Birth:____________ School:____________________

To the Teacher: Please circle the number under "Yes" for those items which apply to this child and circle the number under "No" for those items which do not apply:

| Col. | Yes | No | Item |
|---|---|---|---|
| 23 | 1 | 3 | 1. Tries to do his work. |
| 23 | 5 | 7 | 2. Usually happy. |
| 24 | 1 | 3 | 3. Does not finish his assignments because he is easily distracted. |
| 24 | 5 | 7 | 4. Does not remain in his seat; continually jumping up. |
| 25 | 1 | 3 | 5. Seems lazy. |
| 25 | 5 | 7 | 6. Moves slowly. |
| 26 | 1 | 3 | 7. Annoys others; although not maliciously. |
| 26 | 5 | 7 | 8. Sometimes does not seem to hear. |
| 27 | 1 | 3 | 9. Ready to fight at slightest provocation. |
| 27 | 5 | 7 | 10. Daydreams; seems to stare into space. |
| 28 | 1 | 3 | 11. Ordinarily not a disturbing factor. |
| 28 | 5 | 7 | 12. Accepts constructive criticism. |
| 29 | 1 | 3 | 13. Generally liked by children and adults. |
| 29 | 5 | 7 | 14. Tense and nervous from trying too hard. |
| 30 | 1 | 3 | 15. Has feeling of being "picked on." |
| 30 | 5 | 7 | 16. Frequently quarrels on the playground. |
| 31 | 1 | 3 | 17. Fails to comply with the school routine. |
| 31 | 5 | 7 | 18. Moody - unpredictable. |
| 32 | 1 | 3 | 19. Slow to obey teacher's requests. |
| 32 | 5 | 7 | 20. Becomes angry even if someone accidently bumps him. |
| 33 | 1 | 3 | 21. Unenthusiastic. |
| 33 | 5 | 7 | 22. Remains in his seat but is continually moving - squirms, taps pencil, moves foot, bounces around. |
| 34 | 1 | 3 | 23. Completely disinterested in school work. |
| 34 | 5 | 7 | 24. Laughs and giggles readily. |
| 35 | 1 | 3 | 25. Accepts responsibility. |
| 35 | 5 | 7 | 26. Pushes and shoves in line; bullies. |
| 36 | 1 | 3 | 27. Constantly sings, hums, talks. |
| 36 | 5 | 7 | 28. Quick to fly off the handle. |
| 37 | 1 | 3 | 29. Generally does not join in activities. |
| 37 | 5 | 7 | 30. Overtly impertinent or defiant. |
| 38 | 1 | 3 | 31. Keeps desk and work area clean and returns materials to proper place without having to be reminded. |
| 38 | 5 | 7 | 32. Comes to school on time. |
| 39 | 1 | 3 | 33. Needs urging; works only when supervised. |
| 39 | 5 | 7 | 34. Can work alone for at least twenty minutes at a time on favorite or familiar activities. |
| 40 | 1 | 3 | 35. Takes complete care of his dress and grooming, does not have to be reminded to keep clothing, hair, nails, etc., neat and clean. |
| 40 | 5 | 7 | 36. Can be depended upon to take messages home. |
| 41 | 1 | 3 | 37. Will consistently bring materials to school for use in classroom projects when asked to do so. |
| 41 | 5 | 7 | 38. Reckless about crossing streets; careless in handling potentially dangerous objects such as sharp sticks, scissors or rocks. |
| 42 | 1 | 3 | 39. Has no interest whatever; apathetic. |

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# THE COOPERATIVE RESEARCH PROJECT

# SOCIOMETRIC QUESTIONS

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**Chicago Board of Education**
**of the**
**City of Chicago**
**Chicago, Illinois**
**1961**

# The Cooperative Research Project Sociometric Questions [1]

## Manual of Administration and Scoring

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## Purpose and Content

### Purpose

The Cooperative Research Project's Sociometric Questions is an instrument devised for the purpose of getting a total picture of the child in his social relationships with his classmates and with his teacher, in school and out of school.

How secure does he feel with his teacher? With his classmates?

Does he feel accepted or rejected by them?

Does he feel accepting or rejecting toward them?

### Content

The Sociometric Questions consist of seven brief, rapport-facilitating questions introduced by the words: "Tell me about the boys (and girls) in your room." The first two questions concern the best liked child in the room and the best friend. The third question concerns whom the teacher likes best. The fourth and fifth questions concern playmates: "Are there any boys and girls in your room whom you play with after school or on week-ends?" and "Whom do you play with at recess?" By this time rapport should be sufficiently strong to make inquiry about classmates not liked: "Are there boys or girls in your room whom you do not like?" "Whom?" "Why?" The final questions aim directly at the child's feelings of being rejected by his classmates: "Are some of the boys (or girls) in your room mean to you?" "Which ones are mean to you?"

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[1] This instrument is based on research performed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare.

The Cooperative Research Project is under the general direction of Dr. Frances A. Mullen, Assistant Superintendent of Schools in charge of Special Education. Dr. William Itkin is Project Director.

The answers to the seven "Sociometric Questions" give insight into a child's feelings of accepting his classmates and teacher and into his feelings of being accepted by them.

Some children evidence feelings of being accepted by every child in their room. ("No one is mean to me." "They are all nice to me.") (Item 7.)

Some children give evidence of feeling accepting of every child in their room. ("I like everyone in our room." "All the guys in our room are good guys.")(Item 6.)

Some give evidence of playing with many, given the opportunity, both in school and out of school. ("I play with everybody at recess.") (Item 5.) ("I play with a lot of kids after school.") (Item 4.)

Some children express feelings of security with their teacher who, they report, (has no pets" - "likes us all." (Item 3.)

Some indicate a feeling of security by readily naming their "best friend."(Item 2.)

Some show feeling of accepting others by readily naming one they like the best in their room. (Item 1.)

Feelings of rejecting others and feelings of being rejected by others are similarly indicated by the answers to the Sociometric Questions.

Some children give evidence of rejecting all the children in their room. There is no one they can name as the one they like the best. ("I don't like any of them.") (Item 1.)

They show feelings of rejecting and/or being rejected when they "have no best friend" either in school or out of school. (Item 2.)

They may think that their teacher plays favorites and feel no security in their relationship with their teacher. (Item 3.)

They may have no playmates either in school or out of school. (Items 4 and 5.) Lack of playmates may be due to no opportunity, (no recess--work after school) or it may be due to an actual feeling of rejecting and/or being rejected.

Some children may evidence a positive feeling of dislike for certain children in the room, rejecting them for a variety of reasons, good or poor. (Item 6.)

Some children may evidence feelings of being rejected by some of their classmates whom they consider mean to them. (Item 7.)

Some children may give evidence that they feel rejected by everyone.

### Administration

Because of the personal quality of these questions, it is of particular importance to establish rapport with a child before asking him the Sociometric Questions. The introductory sentence. "Tell me about the boys and girls in your room," serves to encourage him to talk about his class relationships. The questions are read, one by one, with ample time allowed for a considered and unhurried response. Where a follow-up question is indicated, it is used only when the first answer requires it. For example: (Q)"Who is your best friend?" (A) "My teacher." The follow-up question:"Is she in your room?" is omitted, since the answer is implied in the response already given. The purpose of the question is to discover how this child gets along with his classmates and with his teacher. If in answer to,"Who is your best friend?" he answers, "My mother, " he should be encouraged to name someone else in addition.

When asking questions 6 and 7, some children ask the Examiner not to write down the names he gives. In this case it is better to rely on memory until after the interview is over. Not only is rapport of utmost importance, but also a child's desire not"to tell" is of significance.

### Scoring

A large variety of responses are given to these seven questions. These responses are not scored individually. Rather, it is the inter-relationship of responses which is considered in scoring the protocols. Two separate ratings are given independently to each child's answers. One is a rating of the child's acceptance or rejection of others. The second is a rating of the child's feelings of being accepted or rejected by others. Two tables are provided as frames of reference for making these ratings. Table 1 provides the frame of reference used in giving the child a score on his feelings of acceptance or rejection of others. Table 2 provides the frame of reference used in giving the child a score on his feelings of being accepted or rejected by others. The psychologist studies the protocol, forms an over-all picture, makes a clinical judgment, and assigns the ratings.

Inasmuch as two scores are given, each score for a different feeling of social relationships, it is essential that ratings 1 and 2 be given separately without reference to one another.

The answers to certain questions give insight into a child's feelings of being accepted or being rejected by others. The answers to other questions give insight into the child's feelings of accepting or rejecting others. Some questions give insight into both the child's attitude toward others and his perception of the attitudes of others toward him.

Questions 1 and 2 definitely explore the child's feelings of accepting or rejecting others. However, it is possible that the questions may give rise to volunteered information helpful in making a clinical judgment as to the child's feelings of being accepted or being rejected. Example: "Nobody wants to be my best friend." "I like them, but they don't like me."

Question 3 definitely asks about the teacher's attitude toward the child or children and explores teacher-child relationships. How secure does this child feel with his teacher? He may feel, honestly, that he is the best liked, or he may answer "Not me!" or he may indicate the teacher's partiality or impartiality: "She likes all of us." Although there may be a variety of answers, this question definitely explores the child's feelings of being accepted or rejected by the teacher, contributing insight for the Table 2 rating. The answers to questions 4 and 5 should give additional insight necessary for both Table 1 and Table 2 ratings. The child's statement about his playmates may indicate feelings of being accepted as well as of accepting."No opportunity" answers ("No recess""No one lives near me") contribute nothing to the ratings. Question 6 definitely aims at feelings of rejection. Question 7 definitely aims at feelings of being rejected.

In the scoring of the Sociometric Questions in the Cooperative Research Project experiment,no other clinical tools employed in that study were utilized, nor results of other testing consulted. Additional descriptions of the child or his behavior were also deliberately ignored. Neither was his school placement known to the scorer. Sex and age were known, and comprised the only additional information considered in making the judgment. The ratings of each child's responses were thus made blind.

### Table 1

### Frame of Reference for Rating Sociometric Questions Protocols on Feelings of Accepting or Rejecting Others

### Frame of Reference for Ratings of 5

Protocol indicates a warm, out-going personality, accepting of everyone.

Expresses a feeling of being completely accepting of all his classmates (and teacher).

Gives evidence of a feeling of sincerely liking everyone.

No criticism or complaint in the protocol.

Maximum feeling of accepting all others.

### Sample of Protocol Rated 5

Question — Girl - CA 11

1. I like 'em all. I like all the kids in my room.
2. I've got lots of best friends. Linda is my very best.
3. (Q. In your room?) Yes.
4. I play with all the kids what live near me.
   (Or no opportunity: None of the kids in my room live near me.)
5. We all play together -- all of us.
6. No, ma'am, I like 'em all!

### Frame of Reference for Ratings of 4

Shows acceptance of many people, but not of all.

Few or no dislikes.

Indicates feeling of accepting most of his classmates, even though there may be no play opportunities to corroborate the feeling.

Socialization may be curtailed because of lack of opportunity, but social attitudes are for the most part positive.

Some rejections may be expressed if they are comparatively few and based upon good reason.

Accepts more of his classmates than he rejects.

Strong feeling of accepting -- of warmth and friendliness.

## Sample of Protocol Rated 4

Question Girl - CA 9

1. Joyce.

2. Joyce. (Q. In room?) Yes.

4. Joyce, Ann, Deborah, and Willie Mae. (Or No opportunity).

5. These girls I said, and all the girls. Not the boys!
Teacher say, "Don't play with boys."

6. Some of the boys I don't like. They just too bad. They say bad words.

## Frame of Reference for Ratings of 3

Likes one person at least.

Has a best friend.

May indicate several rejections, but hostilities are healthy, controlled, and based upon good reason.

The feeling of accepting, although limited, seems to afford satisfaction, and the feeling of rejecting is not overwhelming.

Minimum feeling of accepting.

## Sample of Protocol Rated 3

Question Boy- CA 12

1. Ernest.

2. Ernest. (Q. In your room?) Yes/no.

4. Just Ernest sometimes, but don't live near me.

5. We don't have recess.

6. Most of the kids I don't like. They always fightin' and they sass the teacher.

## Frame of Reference for Rating of 2

May indicate some slight feeling of accepting, but expresses a much stronger feeling of rejecting others.

Rejects many of his classmates for insufficient reasons. "I just don't like 'em." "They bother me."

Shows a tendency to be easily annoyed by others.

Seems disinterested in others.

May express a feeling of complete indifference to his classmates.

Indicates an ignoring of classmates, an aloofness.

Feelings of accepting have as their object an older person or relative. Example: Best friend and best liked: " She a lady in my block. She give me clothes."

Record may be completely passive, expressing neither acception nor rejection of others. Example: "I don't play."

Feelings of accepting over-balanced by feelings of rejecting.

Predominantly negative attitude towards social relationships.

Protocol may be vague. Example: "I don't know.""No one in particular." "I pay no mind to any of them."

Protocol may be confused. Example: Best friend and best liked, although in the classroom, may not feature in play activities, even though there is opportunity.

Protocol may be contradictory. Example:"I don't like nobody too good," then names five or six she plays with. Example: The best liked and best friend may also be named as the one disliked and/or the one mean to him. "She mean to me, but I love her just the same."

Derogatory nicknames are used. Example: "I play with Boy Baby Jones -- that's what they call him." " Iplay with Booby. I call him Booby. That's not his name."

Table 1 (Cont.)

Mild rejection of everyone, with rationalization. Example: "My mother don't let me play with these kids.""

Tendency to shun classmates -- to remain aloof.

Minimum feeling of rejecting others.

### Sample of Protocol Rated 2

Question — Boy - CA 8

1. I don't know -- nobody special.
2. Minnie. (Q. In your room?) No, she a lady what live down the street.
4. I don't play with none of these kids.
5. Sometimes I play with my sister. She upstairs in 210.
6. I don't hate 'em. You not 'sposed to hate anybody.

### Frame of Reference for Ratings of 1

Hypercritical of others.

Sees only flaws.

Complains of others.

Blames others.

Completely lacking in any expression of accepting.

Criticizes others.

Picks on, teases others.

Feels critical and rejecting, but without intensely hostile feelings.

Strong feeling of rejecting others.

### Sample of Protocol Rated 1

Question — Boy - CA 11

1. None of 'em. They all silly.
2. Nobody. Jerry used to be, but he tell stories 'bout me.
4. No, ma'am. I watch T. V. The kids always fighting, anyway.
5. I don't play with'em. They always pickin' fights.
6. Some's O.K.,but I don't like 'em. They call me names, and they's always fightin.

Table 1 (Cont.)

## Frame of Reference for Ratings of 0

Expresses complete rejection with intensely hostile feelings.

Overt rejection of everyone.

Hates everyone -- does not like anyone.

## Sample of Protocol Rated 0

| Question | Girl - CA 10 |
|---|---|

1. I hate 'em all.
2. Ain't got one. Don't want none.
4. No!
5. Nobody.
6. Yes, all of 'em. I hate 'em all.

## Table 2

## Frame of Reference for Rating Sociometric Questions on Feelings of Being Accepted or Being Rejected by Others

### Frame of Reference for Ratings of 5

Evidences a feeling of complete security in his social relationships at school.

Shows feelings of being completely accepted by everyone--classmates and teacher.

Indicates feelings of confidence in being liked by all his classmates and his teacher.

Feels that he is "the class leader" in desirable ways -- approved of by classmates and teacher.

Maximum feelings of being accepted by others.

### Sample of Protocol Rated 5

Question Boy - CA 10

2. Willie's my very best friend. We never split up till night.
3. Teacher likes me. She likes us all. No pets.
4. A lot of us kids play together after school. (or No opportunity--No recess.)
5. Willie, of course -- and all the kids. (or No opportunity--No recess.)
7. No, nobody's ever mean to me. They're all good guys.

### Frame of Reference for Ratings of 4

Evidences feelings of being accepted by most of his classmates.

Does not feel rejected by teacher.

Expresses a feeling of being liked by a number of his classmates, even though a few may be mean to him.

Feelings of being accepted are considerably stronger than his feelings of being rejected.

Readily accepted as one of the group.

Strong feelings of being accepted by the group.

Table 2 (Cont.)

### Sample of Protocol Rated 4

Question Boy

2. Danny.
3. Linda, 'cause she's always good and don't make no noise. She always likes the girls best. But she likes us all.
4. I play with all the kids in the block, but they don't go to this school.
5. Danny, Leon, Richard, Ronny, Louis -- Oh, all the kids. We play basketball.
7. Once in a while, but nobody's really mean.

### Frame of Reference for Ratings of 3

Feels secure in having a best friend and a teacher who does not reject him.

Feels accepted by at least one of his classmates, and not disapproved by the teacher.

A few may be mean to him, but feelings of being accepted are stronger than feelings of being rejected.

Evidences feeling of satisfaction in being accepted, even though it is by one only.

Minimal feelings of being accepted.

### Sample of Protocol Rated 3

Question Girl -CA 11

2. Ellen.
3. She don't have pets.
4. None in the room.
5. Ellen.
7. Some are mean, but I don't pay no mind to them.

Table 2 (Cont.)

### Frame of Reference for Ratings of 2

Feels alone -- friendless.

Expresses no feeling of being accepted or rejected -- just ignored.

Has no feeling of being accepted by teacher.

Feels overlooked, shunned, by both classmates and by the teacher.

Feels neglected and ignored by teacher. Example:"She just don't ever let me wash her dish like she do the other kids."

Feels accepted in an adult world only; rejected by all peers. Example:"The kids don't like me, but teacher do."

Minimal feelings of being rejected.

### Sample Protocol Rated 2

Question                                        Girl - CA 12

2. Ain't got a best friend -- unless a dog. I guess you'd say a dog.

3. I guess she like Anna Mae best. She always let her run her coat for her.

4. No.

5. They don't play with me. I just watch.

7. No.

### Frame of Reference for Ratings of 1

Expresses feelings of being picked on. Example: "They're always fussin' at me."

Feels criticized. Example: "They say I'm dumb and have buck teeth." "They call me names."

Feels unjustly accused. Example: "They tell the teacher stories on me. They say I stealed."

Strong feelings of being rejected by others.

Table 2 (Cont.)

## Sample of Protocol Rated 1

Question Boy - CA 13

2. Nobody.
3. Don't show she like any of us much.
4. Nobody.
5. Nobody play with me.
7. Lots of 'em is mean in this school. They always signifyin' and pickin' fights, and they say I stealed.

## Frame of Reference for Ratings of 0

Expresses feelings of being completely, actively, and openly hated and rejected by everyone. "Everybody hates me." "Nobody likes me." "Teacher don't like me. Nobody don't."

Evidences feelings of being completely rejected by his group, with deeply hostile feelings.

Has feelings of being the butt of the crowd--persecuted, humiliated, ostracized.

Maximum feelings of rejection by others.

## Sample of Protocol Rated 0

Question Boy- CA 15

2. Nobody. Ain't got none. A dog, mebbe. Ain't my dog. Belongs to a friend of my sister.
3. Not me! She likes some guys, but not me.
4. No, ma'am. Nobody plays with me. I stay in my house and look at TV.
5. Nobody. They all gang up on me.
7. Yes, ma'am, most of 'em is mean. They call me names and beat me up. They say my breath is stinky. They all mean. I don't like it here.

## Reliability and Validity [2]

### Inter-scorer Reliability

It was anticipated that scoring of the Sociometric questions might be influenced by the frame of reference of scorers; e.g., that some scorers may have a general tendency to rate leniently, while others may be inclined to assign relatively low ratings to the Sociometric Questions protocols. It was therefore decided that in order that the ratings of the Sociometric protocols in the Cooperative Research Project experiments be rated according to the same frame of reference, the same scorer would score all protocols. An inter-scorer reliability study was carried out, however, to provide an estimate of the influence of scorer frame of reference on ratings.

A preliminary manual was drafted, and staff members were asked to study the manual, comment upon it, and score ten protocols for practice. Ratings assigned to the ten practice protocols by seven raters were then compared. Twenty protocols were next taken at random from the Matched-Pair Experiment sample. Correlations were computed between the ratings given by each of six examiners to the twenty protocols and the ratings given by Examiner 6, who had rated all of the protocols. The intra-class correlations of the ratings of seven examiners scoring the protocols were next obtained. These correlations were computed for ratings of acceptance of others (Table 1 ratings), for ratings of feelings of acceptance by others (Table 2 ratings), and for the total of the two ratings. The average intra-class correlation for the ratings of seven examiners for the Table 1 rating was .90, for the Table 2 rating .92, and for the total of the two ratings .92. The reliabilities of ratings by a single examiner for the three ratings were .56, .61, and .64. These indicate inter-scorer reliability adequate for use of the Sociometric Questions as an instrument for comparison of groups. While the over-all consistency of scorers for twenty protocols was fairly adequate, there were marked differences of opinion among scorers in rating particular protocols. Some scorers tended to rate more leniently than others.

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[2] The reliability and validity study of the Sociometric Questions was carried out by William Itkin, Irving Brauer, and Berthold Demsch.

### Validity

In an effort to provide some evidence of validity of the Sociometric Questions ratings, Sociometric scores were related to teacher ratings of pupil adjustment derived from the Chicago Adjustment Rating Scales. Ratings of overt social behavior are not the equivalent of the perception of one's acceptance by others or of his attitude toward others. Therefore, these ratings are not considered adequate criteria of concurrent validity of the ratings derived from the Sociometric Questions. It was hypothesized, however, that meaningful relationships between general adjustment ratings and Sociometric Questions ratings might be expected as evidence of construct validity of the Sociometric Questions Interview. Table 3 shows relationships between Sociometric scores and Adjustment Rating Scale scores. This table indicates that Adjustment Rating Scale scores discriminate only between very high and very low Sociometric scores of educable mentally handicapped children. For 285 EMH children enrolled in special classes, the correlation between Adjustment Rating Scale scores and Sociometric total scores was .14 and the correlation between Social Adjustment ratings and Sociometric scores was .16. For 193 EMH children enrolled in regular classes, the correlation between Adjustment Rating Scale scores and Sociometric total scores was .19. For 195 EMH children in regular classes, the correlation between Sociometric total score and Social Adjustment ratings was .24. Although statistically significant these correlations were very low.

## Summary

The Cooperative Research Project Sociometric Questions is a brief structured interview devised for the purpose of helping the clinician form a judgment as to a child's acceptance or rejection of others and as to his feelings of acceptance or rejection by others. The present paper presents a frame of reference for rating protocols on these two attitudes. Inter-scorer reliability of this instrument, is considered satisfactory for use in comparison of groups, although ratings are subject to the influence of frame of reference of raters. Although this instrument is believed to have demonstrated its usefulness as a clinical tool, additional research is needed to establish its validity.

## Table 3

### Comparison of Mean Adjustment Rating Scale Scores Received by EMH Children in Special Classes and in Regular Grades who Received Similar Sociometric Interview Scores

| | Regular Grades | | | Special Classes | | |
|---|---|---|---|---|---|---|
| | N | Mean ARS Scores | s.d. | N | Mean ARS Scores | s.d |
| Sociometric Scores | | | | | | |
| 9 & 10 | 13 | 11.154 | 3.089 | 23 | 11.5652 | 2.613 |
| 8 | 39 | 11.205 | 3.953 | 76 | 12.210 | 2.772 |
| 7 | 14 | 9.786 | 3.622 | 28 | 11.393 | 3.152 |
| 6 | 78 | 9.526 | 3.374 | 99 | 11.535 | 3.117 |
| 5 | 12 | 10.833 | 1.827 | 15 | 10.533 | 3.688 |
| 4 | 25 | 9.120 | 3.150 | 33 | 10.5757 | 3.301 |
| 3 and below | 12 | 9.08 | 2.247 | 11 | 10.73 | 2.573 |

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## SOCIOMETRIC QUESTIONS

| | Col. | Punch |
|---|---|---|
| Child's Name: ______________________ Set No. ______________ | 1 | ____ |
| Case No.: ______________________________________ | 2-5 | ____ |
| Date of Birth: __________________ Age (years) ______________ | 6-7 | ____ |
| School: __________________ Teacher: ______________ | | |

| Col. | Punch | "Tell me about the children (or boys and girls) in your room." |
|---|---|---|
| 10 | ____ | 1. Of all the boys (and girls) in your room, whom do you like the best? ______________________ |
| | | ______________________ |
| 11 | ____ | ______________________<br>(If none, Code 0 in Col. 11) |
| 12 | ____ | 2. Who is your best friend? ______________________ |
| 13 | ____ | Is (he) (she) in your room? ______________________ |
| 14 | ____ | 3. Whom does the teacher like best? ______________________ |
| 15 | ____ | ______________________<br>(Code 1 in 15 if subject designates self with confidence.)<br>(Code 0 and 1 if subject designates self, but validity questioned.) |
| 16<br>17 | ____<br>____ | 4. Are there any boys (or girls) in your room whom you play with after school or on week ends? ______________ Whom? ______________ |
| | | ______________________ |
| 18 | ____ | 5. Whom do you play with at recess time? ______________________ |
| | | ______________________ |
| | | ______________________ |
| 19 | ____ | 6. Are there boys (or girls) in your room whom you do not like? |
| | | ______________________<br>(Code number of dislikes in Col. 19) |
| 20 | ____ | Whom? ______________________ |
| 21 | ____ | Why? ______________________ |
| 22 | ____ | 7. Are some of the boys (or girls) in your room mean to you? |
| | | ______________________<br>(Code number mentioned in Col. 22) |
| 23 | ____ | Which ones are mean to you? ______________________ |
| | | ______________________ |

24-25 ______________________ Score

# THE COOPERATIVE RESEARCH PROJECT
# INTEREST MATURITY TEST: PRELIMINARY REPORT

**William Itkin and Berthold Demsch**

**Cooperative Research Project, Chicago Board of Education**

| | |
|---|---|
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# The Cooperative Research Project[1]
# Interest Maturity Test: Preliminary Report

William Itkin and Berthold Demsch

Cooperative Research Project, Chicago Board of Education

## Purpose

The Cooperative Research Project Interest Maturity Test (IMT) was developed for the purpose of assessing the social maturity level of the interests of educable mentally handicapped children. It may be either individually or group administered.

## Construction

Ten categories of interests were postulated,as follows: (1) active, (2) mechanical, (3) social, (4) household, (5) quiet, (6) art, (7) nature, (8) music and dramatics,(9) creative, and (10) science. Items for the preliminary form of the IMT were constructed by pairing activites of the same areas of interest but of hypothetically different levels of social maturity. The judgment of recreational specialists on the staff of the Cooperative Research Project and that of other recreational specialists in the Chicago public schools served as a basis for preliminary selection of items.

The preliminary form of the Interest Maturity Test consisted of sixty-six paired items. Nine of the items were designated as for either boys or for girls. The preliminary form of the Interest Maturity Test was administered to more than three hundred regular grade boys and more than three hundred regular grade girls of the entire elementary school age range from a number of cooperating schools from Chicago communities of a wide range of socio-economic levels.

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[1] Acknowledgment is made of the participation of Philip Katz, Principal of Ward Elementary School, and Eugene Richards, Rhoda Diamond, and Irving Brauer of the staff of the Cooperative Research Project, in the construction of the Interest Maturity Test.

## Item Analysis

An item difficulty analysis was carried out for boys and girls separately, in which percentages of each of five successive age groups were compared with respect to their choice of the first or second alternative of each pair of items. On the basis of this analysis, two forms of the Interest Maturity Test, each consisting of thirty-one items, were constructed, one for boys and another for girls.

The revised forms of the Interest Maturity Test were administered to the educable mentally handicapped children during the first year of the Cooperative Research Project matched-pair experiment, and a second item difficulty analysis was carried out. Seventeen items of the girls' test and nineteen items of the boys' test yielded adequate discriminations between age groups of educable mentally handicapped children. On the basis of these analyses, the Interest Maturity Tests were rekeyed and reduced to twenty-four items.

## Scoring

The Boys' form of the Interest Maturity Test is scored as follows: For the following items, the more mature alternative is the item in the left hand column: 1, 3, 6, 7, 8, 9, 11, 12, 14, 15, 17, 20, 21, 22, and 23. Items in the right hand column which are keyed as the more mature are: 4, 5, 10, 13, 16, 18, and 19.

The Girls' form of the Interest Maturity Test is keyed as follows: The items in the left hand column which are keyed as the more mature are: 2, 4, 5, 6, 8, 9, 10, 11, 16, 19, 21, 22, 23. The items in the right hand column scored as the more mature are: 3, 7, 12, 13, 14, 15, 18, and 20.

The Boys' and Girls' forms of the Interest Maturity Test are appended to this paper.

## Evidence of Construct Validity

The present paper is considered a preliminary report because of the meager data as yet available on the validity of this instrument. Correlations with the Chicago Adjustment Rating Scale were computed for girls and boys separately, for two age levels; age eleven and above, and age 10 and below. Correlations for the younger age levels were near zero, .02 for girls, and -.07 for boys. For the eleven and above age group, the correlations with the Adjustment Rating Scale were .17 for 103 EMH girls and .19 for 122 EMH boys.

Evidence that the Interest Maturity Test is related to age was available from test-retest data in the matched-pair experiment, which showed a mean increase of approximately 1.5 points over a one year interval for both special class and regular class EMH children. A correlation of .26 was obtained between the Interest Maturity Test and Adjustment Levels derived from analysis of Thematic Apperception Test and Michigan Picture Test Protocols for an N of 247 (Morel and Simons, 1961).

## Summary

This paper has reported upon the construction and upon available evidence of construct validity of the Cooperative Research Project Interest Maturity Test. The Interest Maturity Test is a brief twenty-four item instrument devised for the purpose of assessing the social maturity of an educable mentally handicapped child's interests. Scores on this instrument are related to a very low degree to Adjustment Ratings of above ten year old EMH children. They are also related to a very low, but significantly positive degree to adjustment levels derived from projective test analyses, and to chronological age. The present report is considered preliminary only. More research on the validity and reliability of this instrument is needed before it may be recommended for operational use. The IMT is recommended for use in further experimentation on the basis of clinical experience and preliminary findings.

## Instructions for Administration of Interest Maturity Test

1. Use small groups, but do not mix boys and girls.
2. Have the primary group children use light cardboard markers.
3. Have children write their names, age, school, and date.
4. Read the directions with the children.
5. Use at least the first three items as examples.

### For Boys

Say: "Place your marker under the example. Now: Which do you like better, to 'Go to a party,' or to 'Go to a movie?' If you would like to go to a party better, draw a line under the first one (pointing), but if you would like to go to a movie better, draw a line under the second one, (pointing) etc.

"Now, turn your page over to the other side. Put your marker under the first pair. Which do you like better?".-.- - - etc.

### For Girls

Say: "Now turn your page over to the other side. Put your marker under the example.

"Now: Which do you like better, to 'Go to a party,' or to 'Go to a movie?' If you would like to go to a party better, draw a line under the first one (pointing), but if you would like to go to a movie better, draw a line under the second one," pointing, etc.

NOTE: Instructions should be given orally to small groups.

## WHICH DO YOU LIKE BETTER

(For Boys)

| | |
|---|---|
| 1. Go to a club meeting. | 1. Have an older person take you to a party. |
| 2. Go to a playground. | 2. Play in front of your house. |
| 3. Go to a movie with a girl. | 3. Go to a movie with boys. |
| 4. Roller skate on the sidewalk. | 4. Roller skate at the rink. |
| 5. Play bat and ball with one or two other boys. | 5. Play in a baseball game. |
| 6. Play in a football game. | 6. Kick a football. |
| 7. Go bowling. | 7. Play marbles. |
| 8. Play basketball. | 8. Play tag. |
| 9. Run in a relay race. | 9. Exercise on gym bars. |
| 10. Ride on a sled. | 10. Go ice skating. |
| 11. Fix a bicycle. | 11. Play with toy trucks. |
| 12. Take something apart to see how it works. | 12. Pound nails into wood. |
| 13. Draw a picture of a car. | 13. Look at Popular Mechanics Magazines. |
| 14. Study about the body. | 14. Play doctor or nurse. |
| 15. See a movie about science. | 15. See a movie about cowboys. |
| 16. Have a toy turtle. | 16. Have an aquarium. |
| 17. Read a story. | 17. Listen to someone read a story. |
| 18. Watch other people play checkers. | 18. Play checkers. |
| 19. Make things out of paper and paste. | 19. Make things out of leather. |
| 20. Go to the Art Institute. | 20. Draw with a crayola. |
| 21. Paint with water colors. | 21. Cut paper with scissors. |
| 22. Listen to an orchestra. | 22. Sing by yourself. |
| 23. Go to a band concert. | 23. Listen to records. |
| 24. Listen to music on the radio. | 24. Play a musical instrument. |

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## WHICH DO YOU LIKE BETTER?
(For Boys)

Child's Name: ____________________ School ____________________

Date of Birth: ____________________ Age (years) ________ 1-2 ______

IQ: ________ Date of Examination: ____________________ 3-4 ______

Community (Name School) ____________________ 5 ______

Placement Code 1 for regular grade, 3 for ungraded ____________ 6 ______

Sex ________ (Code 1 Girl, 3 Boy) ____________ 7 ______

Case No. if in matched pair experiment): ____________________ 8-9 ______

Examiner: ____________________ 10-11 ______

Total Score ____________ 12-13 ______

## WHICH DO YOU LIKE BETTER?
(For Boys)

Here are some things boys like to do. Which do you like to do better? If you like to do the thing that I read first better, draw a line under the first one. If you like the second thing better, draw a line under the second one. The first one I read will be on one side of the page. The second one will be on the other side of the page.

For Example:

| | |
|---|---|
| Go to a party. | Go to a movie. |

## WHAT DO YOU LIKE BETTER?
## (For Girls)

| | |
|---|---|
| 1. Go to a party. | 1. Go to a movie. |
| 2. Play with several other children. | 2. Play with one other boy or girl. |
| 3. Play with a toy telephone. | 3. Make a telephone call. |
| 4. Dance with boys. | 4. Dance by yourself. |
| 5. Go to a picnic with other boys and girls. | 5. Go to a picnic with grown up persons. |
| 6. Go to a girls' club. | 6. Play with only one or two other children. |
| 7. Listen to grown up people talk. | 7. Talk. |
| 8. Play volley ball. | 8. Play tag. |
| 9. Play a baseball game. | 9. Play bat and ball with just one or two other children. |
| 10. Knit. | 10. Cut out paper dolls. |
| 11. Carve with wood or soap. | 11. Play with clay. |
| 12. Color with crayons in a coloring book. | 12. Paint with water colors. |
| 13. Put a puzzle together. | 13. Sew. |
| 14. Go to the movies with an older person. | 14. Go to the movies with several other children. |
| 15. Listen to an older person read a story. | 15. Read stories. |
| 16. Play checkers. | 16. Watch other people play checkers. |
| 17. Clean up a doll house. | 17. Clean up the house for company. |
| 18. Play house | 18. Cook. |
| 19. Bake. | 19. Watch older person bake. |
| 20. Go shopping with an older person. | 20. Go shopping by yourself. |
| 21. Clean the house. | 21. Sweep the floor. |
| 22. Make costumes or design clothes. | 22. Play "dress up" by putting on grown-up person's clothes. |
| 23. Go to a museum. | 23. Catch fireflies or butterflies. |
| 24. Go to the zoo. | 24. Read about strange animals. |

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## WHICH DO YOU LIKE BETTER?
(For Girls)

Child's Name: ______________________ School: __________
Date of Birth: ______________________ Age: (years) __________ 1-2 ______
IQ: __________ Date of Examination: __________ 3-4 ______
Community (Home School) ______________________ 5 ______
Placement: (Code 1 for regular grade, 3 for ungraded) __________ 6 ______
Sex: __________ Code 1 girl, 3 Boy) __________ 7 ______
Case No. (If in matched pair experiment): __________ 8-9 ______
Examiners: ______________________ 10-11 ______
Total Score __________ 12-13 ______

## WHICH DO YOU LIKE BETTER?
(For Girls)

Here are some things girls like to do. Which do you like to do better? If you like to do the thing that I read first better, draw a line under the first one. If you like the second thing better, draw a line under the second one. The first one I read will be on one side of the page. The second will be on the other side of the page.

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